



**THE HONG KONG POLYTECHNIC UNIVERSITY  
DEPARTMENT OF BUILDING AND REAL ESTATE**

# **Part-Time Degree Programmes**

**For Student Intake 2008/2009**

**BSc (Hons) in Building Engineering & Management (32102-BEM)**

**BSc (Hons) in Surveying (32106-SUR)**

September 2008

**This Definitive Programme Document is subject to continuous review and changes. Students will be informed of the changes as and when appropriate.**

Department of Building and Real Estate  
Faculty of Construction and Land Use

September, 2008

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# Part-time Degree Programmes

## 1. GENERAL INFORMATION

University	:	The Hong Kong Polytechnic University (PolyU)
Faculty	:	Faculty of Construction and Land Use (FCLU)
Host Department	:	Department of Building and Real Estate (BRE)
Programme	:	BSc (Hons) in Building Engineering & Management (BEM) BSc (Hons) in Surveying (SUR)
Duration	:	Four Years normally Eight years maximum
Mode of Attendance	:	Part-time (evenings)
System	:	Credit-based System (CbS)

The Department of Building and Real Estate, under the Faculty of Construction and Land Use is the host department for these programmes. BSc (Hons) in Building Engineering and Management is fully accredited by the Institution of Engineers (HKIE), the Chartered Institute of Building (CIOB) and in progress seeking re-accreditation of the Hong Kong Institute of Construction Managers (HKICM). BSc (Hons) in Surveying is accredited by the Hong Kong Institute of Surveyors.

Other departments and centres within the University that contribute to the programmes are the English Language Centre (ELC), Civil & Structural Engineering (CSE) and Building Services Engineering (BSE). The Department operates its academic programmes using the Credit-based System. Each programme comprises a number of subjects, expressed in credits. All programmes are upon based University academic year. Under the Credit-based System, an academic year consists of three semesters: Semester 1, Semester 2 and the summer term. For Semesters 1 & 2, each of which usually consists of 14 weeks and followed by examination period. Between these two semesters, there is a semester break. Summer term is of 7-week duration and usually begins in June.

## 2. CREDIT REQUIREMENT AND DURATION

**2.1** There are a defined number of credits for each programme of which students have to register for each semester in accordance with the programme curriculum.

**2.2** Students of any programmes are not allowed to have nil subject registration in any semester, including the mandatory summer term as required by their programmes unless they have obtained approval from the Department. The legitimate reasons for nil subject enrolment must be provided for the consideration of the Department. Any semester in which a student is allowed to take nil subjects will be counted towards the maximum period of registration.

**2.3** A student is required to register for a programme at the time of admission. The graduation requirement for each programme is stipulated in the programme curriculum with a normal duration of 4 years (part-time) and a maximum duration for completion of 8 years. All of which studies should be within the semester of the academic year.

### **3. PROGRESSION PATTERN**

**3.1** There is a specified progression pattern and curriculum for each academic programme. Notwithstanding any alterations, which the Department may consider necessary, students are expected to follow the progression pattern and curriculum unless special approval has been granted. **Section 9 PROGRESSION PATTERNS** contain details of the prescribed progression pattern for each of the four programmes under this Part-time Degree Scheme.

**3.2** Students may apply for deferment of study if they have a genuine need to do so, such as illness or an overseas business trip. Approval from the Scheme Chair and Programme Leader are required. The deferment period will not be counted as part of the maximum period of registration.

### **4. PROGRAMME MANAGEMENT**

#### **4.1 Programme Committee**

Chairman: Scheme Chair  
Members: Head, Department of Building and Real Estate (ex-officio)  
Programme Leaders  
Deputy Programme Leaders  
Programme Tutors  
Subject Leaders  
Two student representatives from each level of the 4 Part-time BSc (Hons) Programmes (except where confidentiality is involved) and  
Co-opted additional members from contributing departments  
Secretary: Departmental Executive Officer

The Programme Committee is responsible to the Faculty Board for the management of its programme, which includes:

- (a) Ensuring that the Programme is implemented properly;
- (b) Recommending to the Heads of the host and contributing departments the resources required to implement the programme;
- (c) Reviewing programme objectives and resources allocation requirements;
- (d) Reviewing the progress of students and the teaching and learning activities and solve any problems arising therefrom;
- (e) Reviewing academic regulations, admissions policy, and assessment methods;
- (f) Consulting students from time to time.

#### **4.2 Programme Management Group**

The Programme Management Group is given the responsibility to monitor and control the running of the programme. The Group comprises the Programme Leader and Programme Tutors. The Group meets three or four times a year to consider the progress of the students as well as receiving comments from the various subject leaders on proposed changes to the programme.

#### **4.3 Head/Student Liaison Group**

A Head/Student Liaison Group, made up of the Head of Department and two student representatives from each level of the programme, meets twice a year to discuss issues of concern. This Liaison Group provides a forum for full and frank exchanges of view.

#### 4.4 Staff/Student Liaison Group

The Student/Staff Liaison Group, made up of two student representatives from each level of the programme, the Programme Tutors, and the Programme Leader, meets twice a year to discuss such issues as student workload, teaching methods and the relevance of the materials taught. This Liaison Group provides a forum for the full and frank exchange of views between staff and students.

#### 4.5 Programme Leader

The Programme Leader is responsible for the day-to-day management of a particular programme and provides academic and organisational leadership for that programme through the Programme Committee and Programme Management Group. Programme Tutors assist the Programme Leader.

#### 4.6 Programme Tutor

A Programme Tutor is involved in the teaching of the Programme and assists the Programme Leader in the day to day operation of the programme. Programme Tutors are required to monitor students' progress, to co-ordinate and monitor students' workload, and to report to the Programme Leader, students whose progress in either attendance or coursework is not satisfactory. An additional function is to assist students in solving personal problems with the help of the Student Affairs Office.

### 5. SUBJECT MANAGEMENT

#### 5.1 Subject Leader

The BRE Department adopts a team approach to teaching. Subjects are normally delivered by more than one lecturer with one of the team designated as the Subject Leader responsible for the development of the subject and for co-ordinating the activities of the lecturers involved.

#### 5.2 Subject Syllabus

Syllabus details, are provided in *Section 10 SUBJECT PORTFOLIO*. Each subject has an allocated credit value (the standard value is 3 credits) and, in terms of effort, a student is expected to do 40 hours of study to earn a credit.

#### 5.3 Subject Levels

The credit-based subjects are classified according to the University Credit-based System. Each subject is given a unique code that identifies the department offering the subject, the intellectual level and the discipline. For example, subject code BRE201 consists of the letter prefix "BRE" identifying the department offering the subject, and in this case it is the Department of Building & Real Estate; "2" indicating that it is a level 2 subject; and "01" indicating the coding of that particular subject. The level codes are as follows:

<u>Level code</u>		<u>Explanation</u>
0	=	Sub A-Level standard
1	=	A-Level standard
2	=	Standard comparable to Year 1 of a 3-year honours degree programme
3	=	Standard comparable to Year 2 of a 3-year honours degree programme
4	=	Standard comparable to Year 3 of a 3-year honours degree programme
5	=	Master's level
6	=	Doctoral level

Although the level codes 2 to 4 are for undergraduate degrees, other awards may also use subjects with level codes 2 to 4 if the level of the subject is considered to be appropriate for the level of award. Therefore, level 2 subjects, level 3 subjects and level 4 subjects may be included in some sub-degree or master programmes, whilst level 5 subjects may be included as elective subjects in some undergraduate degree programmes (the latter is restricted to a maximum of 9 credits).

#### **5.4 Requisites and Exclusions**

Each subject may have pre-requisites, co-requisites and exclusions. The pre-requisite of a subject must have been obtained before a student registers for that subject. However, the Department has the discretion to waive the pre-requisite requirements of a subject, if deemed appropriate. If a subject X has a subject Y as a co-requisite, both X and Y must be taken in the same semester. And, if subject X has subject Y as exclusion, a student having completed subject Y cannot have subject X count towards the award.

#### **5.5 Credit Transfer and Exemption**

**5.5.1 Credit Transfer** will be given credits for recognized previous study, which will count towards the award requirement. University policy stipulates that not more than 50% of the normal credit requirement for the academic award may be transferable from approved institutions outside the University, and not more than 67% of the normal credit requirement credits for the award can be transferred from programmes within the University. However, for the two part-time programmes covered by this scheme, there is the additional stipulation that no more than 14 credits in total for BSc (Hons) in Building Engineering & Management and 17 credits in total for BSc (Hons) in Surveying respectively may be transferred from other programmes either inside or outside of the University. The reason for this stipulation is in order to comply with the requirement of the professional bodies that students on a part-time degree programme basis should study at least 50% of the subjects studied by their full-time counterparts.

**5.5.2 Exemption** from taking subjects means that the credits associated with the exempted subjects will not count towards the award requirement. If a student is exempted from taking a specified subject because they have previously successfully completed similar subjects in another programme, another subject will have to be taken in order to satisfy the credit requirement.

### **6. ASSESSMENT**

General Assessment Regulations (GAR) of the University governs the conditions for student assessment and progression and the recommendation of an award.

#### **6.1 Assessment Methods**

Students' performance in a subject is assessed by either of the following methods:

- (a) **Coursework only:** To pass a subject by this method, a student must attain a minimum Grade 'D' in coursework (tests, assignments, projects, laboratory work, field exercises, presentations and other forms of classroom participation).
- (b) **Examination and Coursework** (the weighting of each component is stated in the Subject Portfolio): To pass a subject by this method a student must attain a minimum Grade 'D' in coursework and a minimum Grade 'D' in the examination.
- (c) **Continuous Assessment:** Both **Projects** and **Dissertation** are of this type of assessment where students are assessed through a period of time with stages of work and progress together with the final products of works. The 'Guidance Notes for the Final Year Dissertation' detailed the assessment and process.

Assessment methods and parameters are determined by the Subject Leader who will inform the students of the details at the beginning of each semester.

## 6.2 Subject Assessment Review Panel

The Subject Assessment Review Panel (SARP) is responsible for monitoring the academic standard and quality of subjects and ratifying subject grades. It meets at the end of each semester, normally in January and June. The Panel reviews the distribution of grades within a subject and finalises the grades at the end of each semester/term before submission to the Board of Examiners. The Board of Examiners will not attempt to change any grades.

Composition of the SARP is as follows:

Chairman:	Head, Department of Building and Real Estate
Members:	BRE Scheme Chairperson Programme Leaders Subject Leaders/Lecturers Representative from Contributing Departments (Co-opted Members) Departmental Academic Advisor and/or External Examiners
Secretary:	Departmental Executive Officer

## 6.3 Grading

At the end of each semester students will be informed of the grade achieved for each subject. Assessment grades shall be awarded on a criterion-referenced basis. A student's overall performance in a subject shall be graded as follows:

Grade	Short Description	Subject Grading Description
A+	Excellent	The student's work is outstanding. It exceeds the subject learning outcomes in all regards.
A		The student's work is excellent. It exceeds the subject learning outcomes in nearly all regards.
B+	Good	The student's work is very good. It exceeds the subject learning outcomes in the majority of regards.
B		The student's work is good. It exceeds the subject learning outcomes in some regards.
C+	Satisfactory	The student's work is wholly satisfactory. It fully meets all the subject learning outcomes.
C		The student's work is satisfactory. It largely meets all the subject learning outcomes.
D+	Marginal	The student's work is barely adequate. It fails marginally to meet all the subject learning outcomes.
D		The student's work is weak. It fails to meet the subject learning outcomes in some regards.
F	Failure	The student's work is inadequate. It fails to meet most of the subject learning outcomes.

Subject passing grades are "A+" to "D" whilst "F" is a subject failure grade. No credit will be earned if a subject is failed. At the end of each semester/term, a Grade Point Average (GPA) will be computed as follows, and based on the grade point of all the subjects (failed subjects are included in the GPA calculation).

$$\text{GPA} = \frac{\sum \text{Subject Grade Point} \times \text{Subject Credit Value}}{\sum \text{Subject Credit Value}}$$

Where n = number of all subjects (inclusive of failed subjects) taken by the student up to and including the latest semester/term, but for subjects which have been retaken, only the grade obtained in the final attempt will be included in the GPA calculation.



Exempted, ungraded or incomplete subjects and subjects for which credit transfer has been approved without a grade assigned to it, will be excluded from the GPA calculation. In addition, subjects from which a student has been allowed to withdraw (i.e. those with the code ‘W’) will be excluded. Subject which has been given an ‘S’ subject code i.e. absent from examination, will be included in the GPA calculation and will be counted as ‘zero’ grade point. GPA is therefore the unweighted cumulative average calculated for a student, for all relevant subjects taken from the start of the programme to a particular point of time. GPA is an indicator of overall performance and is capped at 4.0.

#### **6.4 Absence from an assessment component**

A student who has been absent from an examination, or other form of assessment, due to illness or other causes acceptable to the SARP, may be given another examination or other form of assessment, which will be regarded as a first assessment for grading purposes. This assessment shall take place before the commencement of the following academic year. In the cases of illness, the student will be required to submit a medical certificate.

#### **6.5 Retaking Subjects**

Normally, students may retake only those subjects that they have failed; i.e. obtained an F grade. Students cannot retake a subject if they have passed it with a grade C or above. Retaking a subject that has been passed at Grade D or D+ will require the expressed approval of the host department of the programme on which the student enrolls.

### **7. BOARD OF EXAMINERS**

#### **7.1 Responsibilities**

The Board of Examiners (BoE) meets at the end of each semester, following the Subject Assessment Review Panel (SARP). The BoE is responsible to the Senate for making decisions concerning:

- a) Classification of awards;
- b) De-registration cases; and
- c) Cases with extenuating circumstance.

The BoE will not attempt to change the grades for any student in any subject or condone failures. Decisions of the BoE, except those on award and de-registration cases which are straight forward, will be ratified by the Faculty Board. Any decisions by the BoE outside the general assessment regulations of the University supported by the Faculty Board, should be referred to the Academic Regulations Committee for ratification, all such cases shall be reported to the Senate. Decisions by BoE outside the programme regulations but within the general assessment regulations of the University fall within the authority of the Faculty Board.

#### **7.2 Composition of BoE**

The composition of the BoE is as follows:

Chairman:	Head, Department of Building and Real Estate
Members:	BRE Scheme Chairperson The Programme Leader Programme Tutors 4 to 5 internal subject examiners Departmental Academic Advisor and/or External Examiners
Secretary:	Departmental Executive Officer

#### **7.3 Appeals**

Appeals against the decision of the Subject Assessment Review Panel / Board of Examiners must be made within 5 working days upon the public announcement of the examination results. A student should make the appeal in writing firstly to the Head of the BRE Department. The Department will inform the student of the appeal result and, if the appeal is successful, the Department will inform the Faculty.

## 8. PROGRESSION AND AWARD

### 8.1 Progression

At the end of each semester, the Board of Examiners determines whether each student is:

- (i) Eligible for progression towards an award; or
- (ii) Eligible for an award; or
- (iii) Required to be de-registered from the programme.

A student will have 'progressing' status unless he falls within the following categories, either of which may be regarded as grounds for de-registration from the programme:

- (i) the student has exceeded the maximum period of registration;
- (ii) the student's GPA is lower than 2.0 for two consecutive semesters and his Semester GPA in the second semester is also lower than 2.0; or
- (iii) the student's GPA is lower than 2.0 for three consecutive semesters.

Notwithstanding, a student may be de-registered from the programme before the 'third' semester if his academic performance is poor to the extent that the BoE deems his chance of attaining a GPA of 2.0 at the end of the programme is slim or impossible.

### 8.2 Eligibility for Award

A student will be eligible for award if all the following conditions are satisfied:

- (i) Accumulation of the requisite number of credits as defined for the particular award;
- (ii) Satisfying all the 'compulsory' and 'elective' requirements as defined in the definitive programme document; and
- (iii) Having a Grade Point Average (GPA) of 2.0 or above at the end of the programme.

A student is required to graduate as soon as all the conditions for award are satisfied.

### 8.3 Guidelines for Award Classification

The following are guidelines for the Boards of Examiners' reference in determining award classifications. The BoE will exercise its judgement as to the award for each student and may use other relevant information.

Hons Degrees	All other Programmes	Guidelines	GPA or weighted GPA
1 <sup>st</sup>	Distinction	The student's performance/attainment is outstanding, and identifies him/her as exceptionally able in the field covered by the programme in question.	3.7+ to 4
2:i	Credit	The student has reached a standard of performance/attainment which is more than satisfactory but less than outstanding.	3.2 + to 3.7-
2:ii		The student has reached a standard of performance/attainment judged to be satisfactory, and clearly higher than the "essential minimum" required for graduation.	2.3+ to 3.2-
3 <sup>rd</sup>	Pass	The student has attained the "essential minimum" required for graduation at a standard ranging from just adequate to just satisfactory.	2.0 to 2.3-

- 8.4** A Pass-without-Honours degree award will be recommended only under exceptional circumstances, when the student has demonstrated a level of final attainment which is below the 'essential minimum' required for graduation with Honours from the programme in question, but when he has nonetheless covered the prescribed work of the programme in an adequate fashion, while failing to show sufficient evidence of the intellectual calibre expected of Honours degree graduates. For example, if a student in an Honours degree programme has a Grade Point Average (GPA) of 2.0 or more, but his Weighted GPA is less than 2.0, he may be considered for a Pass-without-Honours classification.

## **9. PROGRESSION PATTERNS**

## PROGRESSION PATTERN

### BSc (Hons) in Building Engineering & Management 32102

**Total credits for the PT Building Engineering & Management Programme is 62 credits.##**

*Unless otherwise specified, subjects are compulsory and carry 3 credits*

#### **Year 1** [September 2008]

##### **Semester 1**

BRE391 Construction Technology II  
CSE290 Introduction to Geotechnology

##### **Semester 2**

BRE351 Contract Administration  
BRE349 Building Services I

#### **Year 2** [September 2009]

##### **Semester 1**

BRE302 Structure II  
BRE3931 Temporary Work Design (4 credits in 4 semesters including Year 2: S.1, S.2 and summer term and Year 3: S1)

##### **Semester 2**

BRE324 Engineering Economics  
BRE350 Project Management & Procurement  
#ELC3403 Workplace English for FCLU (3 credits)  
BRE3931 Temporary Work Design (4 credits in 4 semesters including Year 2: S.1, S.2 and summer term and Year 3: S1)

#### **Year 3** [September 2010]

##### **Semester 1**

BRE377 Research Methods  
BRE401 Construction Technology III  
BRE4051 Project Evaluation & Development (5 credits in 2 semesters)

##### **Semester 2**

BRE345 Measurement, Documentation & Estimating  
BRE4051 Project Evaluation & Development (5 credits in 2 semesters)  
BRE453 Building Services II  
BRE477 Dissertation (6 credits in 4 semesters including Year 3: S2, Summer Semester, Year 4: S1 & Year 4: S2)

#### **Year 4** [September 2011]

##### **Semester 1**

BRE477 Dissertation (6 credits in 4 semesters including Year 3: S2, Summer Semester, Year 4: S1 & Year 4: S2)  
BRE426 Geotechnical & Foundation Engineering

##### **Semester 2**

BRE477 Dissertation (6 credits in 4 semesters including Year 3: S2, Summer Semester, Year 4: S1 & Year 4: S2)  
BRE4281 Construction Engineering Management

ELECTIVES\* 2 Elective Subjects

Students are to opt two electives either in S.1 or S.2 from the list of the elective subjects offered by the Department and as specified.

#### **Elective Subjects :**

***\*At least one elective from the following:***

BRE326\*\* Maintenance Technology & Management  
BRE450\*\*\* Building Maintenance for Sustainability  
BSE332 Fire Services

***\*Only one elective from the following:***

BRE442 Forecasting and Competition in the Built Environment  
BRE416 Computerization of Construction Production & Management  
BRE439 Engineering Contract Procedure

**Total credits = 62**

\*\* Students can opt for BRE326 **prior** to taking BRE 450.

\*\*\* Students who have opted for BRE 450 **prior** to BRE 326, they will **not** be allowed to opt for BRE 326 afterwards.

**# ELC3404 (1 credit) Job Application Skills shall be taken exclusively by the PolyU Higher Diploma holders obtaining credit transfer of ELC3401 (2 credits) only instead of ELC3403.**

**## The Department reserves the rights to review/revise the subjects offered and time of offer.**

## PROGRESSION PATTERN

**BSc (Hons) in Surveying 32106**

**Total credits for the PT Surveying Programme is 65 credits.#**

*Unless otherwise specified, subjects are compulsory and carry 3 credits.*

### Year 1

#### **Semester 1 (September 2008)**

BRE217 Planning & Development  
BRE315 Property Valuation

#### **Semester 2**

BRE326 Maintenance Technology & Management  
BRE337 Property Law  
#ELC3403 Workplace English for FCLU (*3 credits*)

### Year 2

#### **Semester 1 (September 2009)**

BRE329 Construction Contract Law  
BRE341 Property Management I

#### **Semester 2**

BRE345 Measurement, Documentation & Estimating  
BRE347 Urban & Construction Economics  
BRE350 Project Management & Procurement  
BRE346 Integrated Project IIA (*4 credits in 3 semesters including Year 2: S2 & summer term & Year 3: S1*)

### Year 3

#### **Semester 1 (September 2010)**

BRE336 Development Control Law  
BRE346 Integrated Project IIA (*4 credits in 3 semesters including Year 2: S2 & summer term & Year 3: S1*)  
BRE377 Research Methods  
BRE441 Professional Studies (*5 credits in 2 semesters*)

#### **Semester 2**

BRE319 Property Investment & Finance  
BRE441 Professional Studies (*5 credits in 2 semesters*)  
BRE477 Dissertation (*6 credits in 4 semesters including Year 3: S2, Summer Semester, Year 4: S1 & Year 4: S2*)

**# ELC3404 (1 credit) Job Application Skills shall be taken exclusively by the PolyU Higher Diploma holders obtaining credit transfer of ELC3401 (2 credits) only instead of ELC3403.**

## **Year 4**

### **Semester 1 (September 2011)**

BRE477 Dissertation (*6 credits in 4 semesters including Year 3: S2, Summer Semester, Year 4: S1 & Year 4: S2*)

**\*BS Discipline – Specific Elective Subject:**

BRE415 Dispute Resolution

**\*QS Discipline – Specific Elective Subjects:**

BRE415 Dispute Resolution

BRE440 Cost and Value Management

BRE442 Forecasting & Competition in the Built Environment

**\*GP Discipline – Specific Elective Subjects:**

BRE4291 Real Estate Marketing

BRE436 Applied Property Valuation

### **Semester 2**

BRE477 Dissertation (*6 credits in 4 semesters including Year 3: S2, Summer Semester, Year 4: S1 & Year 4: S2*)

**\*BS Discipline – Specific Elective Subjects:**

BRE435 Design, Adaptation & Conversion

BRE437 Facility Management

BRE349 Building Services I

**\*QS Discipline – Specific Elective Subjects:**

BRE439 Engineering Contract Procedure

**\*GP Discipline – Specific Elective Subjects:**

BRE418 Real Estate Development

BRE427 Applied Property Investment

- \*1. Surveying students are required to opt ONE Discipline from the 3 surveying disciplines offered by the Department.**
- 2. Students are required to complete the 12 credits of the 3 Disciplines – Specific Elective Subjects in particular to their choices of disciplines.**

**Total credits: 65**

**## The Department reserves the rights to review/revise the subjects offered and time of offer.**

## **10. SUBJECT PORTFOLIO**

Subject No.	BRE217	<b>PLANNING AND DEVELOPMENT</b>	
Level	2		
Contact Hours	Lect:21 Sem/Tut:21		<b>Subject Aim:</b>
Student Effort Hours	120		This subject is intended to:
Assessment Method	Coursework 30% Examination 70%		1. Comprehend the socio-economic and institutional principles governing land use patterns and building forms in cities.
Credit Value	3		2. Review the town planning framework and land development process.
Pre-requisites	Nil		3. Evaluate contemporary government policies and regulations on land use, town planning as well as urban development.
Co-requisites	Nil		
Exclusions	Nil		
Lecturer(s)/Dept.	C.W. Yeung (BRE) H.T. Choy (BRE)		
<b>Learning Outcomes:</b>			
Students will demonstrate their abilities to:			
<ol style="list-style-type: none"> <li>Analyze the socio-economic and institutional factors affecting land use patterns, urban built-forms, and growth and decline of cities.</li> <li>Comprehend the regulations and practices related to urban planning and development context.</li> <li>Diagnose the urban planning cum development problems in cities and show the problem-solving skills in relation to the problems.</li> <li>Communicate and work effectively with various professionals involved in the land conversion process.</li> </ol>			
<b>Syllabus Content:</b>			
<i>Planning Issues</i>			
<ul style="list-style-type: none"> <li>A review of urban planning system in Hong Kong and the problems associated with it.</li> <li>Public consultation in the urban planning process; planning application and development control issues.</li> <li>Urban design and environmental planning; compensation and betterment associated with urban planning.</li> <li>Urban renewal and rural area planning problems in Hong Kong.</li> <li>Regional planning theories and policies; Hong Kong in the regional context of South China.</li> </ul>			
<i>Development Issues</i>			
<ul style="list-style-type: none"> <li>An overview of the land conversion and development process.</li> <li>An introduction to statutory and administrative control systems related to urban development.</li> <li>An evaluation on the tactics adopted by the professionals to tackle the common problems arising from the urban development process.</li> <li>A critical review of government policy affecting the land development industry.</li> <li></li> </ul>			
<b>Learning and Teaching Approach:</b>			
Relevant theories, concepts and regulations will be introduced in lectures, supplemented with applications and discussions during seminars. Students will further appreciate the subject by conducting a case study and / or writing a term paper.			
<b>Assessment Methods:</b>			
Examination:	70%, students are required to sit in a two-hour examination.		
Seminar Project/ Term paper:	30%, students are required to hand-in a report or term paper in which the abilities stipulated under the Learning Outcomes session will be testified.		



**Reading List:****Recommended:**

- Consumer Council (1996), *How Competitive is the Private Residential Property Market?*, Hong Kong: Hong Kong Consumer Council .
- Hong Kong Government (1991), *Comprehensive Review of the Town Planning Ordinance, Consultative Document*, Hong Kong: Hong Kong Government Printer.
- Hong Kong Government (1996), *Territorial Development Strategy Review – An Overview*, Hong Kong: Hong Kong Government Printer.
- Hong Kong Institute of Planners (1996), *Planning in Hong Kong 1997 and Beyond*.
- Neild, S. (1992), *Hong Kong Land Law*, Hong Kong: Longman.
- Nissim, R. (1998), *Land Administration and Practice in Hong Kong*, Hong Kong: Hong Kong University Press.
- Planning Development (1995), *Town planning in Hong Kong – A Quick Reference*, Hong Kong: Hong Kong Government Printer
- Poon, T. and Chan, E. (1998), *Real Estate Development in Hong Kong*, Hong Kong: PACE Publishing Ltd.
- Wong, W. and Chan, E. (1997), *Professional Practice for Architects in Hong Kong*, Hong Kong: PACE Publishing Ltd.
- Yeung, C., Tam, C and Tang, S. (1996), “Implication of Pearl River Delta Development of Hong Kong’s Strategic Land Use Planning – A Pilot Study.

**Supplementary:**

- Annual Reports, various issues, Urban Renewal Authority, Hong Kong
- Buildings Ordinance, Cap. 123 of Laws of Hong Kong
- Cruden, G. (1999), *Land Compensation and Valuation Law in Hong Kong*, 2<sup>nd</sup> Ed., Singapore: Butterworths
- Property Reviews, various issues, Rating and Valuation Department, Hong Kong
- Sullivan, A. (1993), *Urban Economics*, 2<sup>nd</sup> Ed, Homewood, IL: Irwin.
- Town Planning Ordinance, Cap. 131 of Laws of Hong Kong

Subject Code	BRE 218	<b>INTEGRATED PROJECT I</b>
Level	2	
Contact Hours	LT: 18/TU:7.5 WS:12/ LB:16	
Student Effort Hours	120	
Assessment Method	Coursework 100%	
Credit Value	3	
Pre-requisites	Nil	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	B.S. Tang (BRE) L.Y. Tang (BRE) C.H. Yam (BRE) A. Kwok (IC)	<b>Subject Aim:</b>  <i>This subject is intended to:</i> <ol style="list-style-type: none"> <li>1. Provide a platform for students to integrate their knowledge about current issues in the building and property industry</li> <li>2. Encourage student-centred learning and develop their generic and professional competence</li> <li>3. Provide basic and practical training in construction drawing skills</li> </ol>
<b>Learning Outcomes:</b>  <i>Students will demonstrate their ability to:-</i>  <u>Academic Outcomes</u> <ol style="list-style-type: none"> <li>1. Relate the current issues in building and property industry to personal and professional development</li> <li>2. Synthesize the knowledge of different disciplines</li> <li>3. Evaluate these issues in a systematic and analytical manner and articulate arguments</li> <li>4. Demonstrate skills in construction drawing</li> <li>5. Use AutoCAD in project work</li> </ol> <u>Generic Outcomes</u> <ol style="list-style-type: none"> <li>1. Gather and analyze relevant information using appropriate technology</li> <li>2. Communicate the arguments in a clear and articulate manner</li> <li>3. Develop critical and creative minds</li> <li>4. Work independently and identify needs for self-learning and self-improvement</li> <li>5. Co-operate with others in a professional team working environment to excel for the common goal</li> </ol>		
<b>Brief Syllabus Content:</b>  <i>Contemporary issues in building and real estate industry:</i> <ul style="list-style-type: none"> <li>• Role, function and duty of professionals</li> <li>• Market structure, industrial organization and competitive environment</li> <li>• Government, law and industry</li> <li>• Globalization and professionalism</li> <li>• Sustainability and environmental issues</li> <li>• Technology application, development and advancement</li> <li>• Building maintenance and property management</li> <li>• Urban development, urban form and built environment</li> <li>• Education, training and continued professional development, etc.</li> </ul> <i>Industrial Centre (IC) Training:</i> <ul style="list-style-type: none"> <li>• Construction drawing: AutoCAD</li> </ul>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

This subject comprises two separate components: (a) BRE Professional studies (2 credits); and, (b) Industrial Centre (IC) training (1 credit).

BRE Professional studies

This component will be delivered by means of lecture sessions and interactive tutorial discussions.

Lectures allow teaching staff (and visiting speakers from the industry if appropriate) to brief the students on the contemporary debates in the building and property industry. These lectures enable the students to learn to describe the issues, relate them to their personal/professional development and synthesize the subject matters. Short quizzes may be held to strengthen student learning.

The main thrust of this subject is the debate to be held at the tutorial sessions. Students are required to form opposing teams, take position in a controversial topic and present their arguments in a debating session. Each team is required to carry out information collection, analysis of the topic and preparation of arguments. Every member has to present his/her arguments verbally followed by cross-examination. Floor students are required to contribute questions/comments in the interactive seminar discussions. The debating topics are related to the contemporary issues in the building and property industry and addressed in the lectures. Students may be required to prepare written submissions after the tutorial sessions.

Industrial Centre (IC) Training

This component is delivered by the Industrial Centre and involves training workshops and practical project works in construction drawing.

It involves technical demonstrations, followed by self-assessments to ensure students' acquisition of the skills. Student attendance to the demonstrations is compulsory.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Student performance in this subject is entirely based upon continuous assessment and students are required to achieve a pass in both the BRE and the IC components. Students will be assessed on both individual and team efforts, and at various stages of their work. Student peer-assessments are included as appropriate. The assessed items may include class attendance & work discipline, communication skills, team-building performance, short quizzes and workshop reports. Written submissions will be assessed on the basis of their relevance, accuracy, communication, comprehensiveness and validity of analysis, practicality, creativity and imagination. Verbal presentations will be assessed in terms of the communication skills, the quality of visual aids and styles.

**Indicative Reading List:**

- Chan, E. H.-w. and Wong, W.-s., (eds.). (2000). *Building Hong Kong: environmental considerations*. Hong Kong: Hong Kong University Press.
- Chiang, Y. H., Anson, M. and J. Raftery (2004) (eds.) *The construction sector in Asian economies*. London: Spon.
- Chiang, Y. H. and S. Ganesan. (1996). *Construction in Hong Kong*. Aldershot: Avebury.
- Deakin, M. (2004). *Property management: corporate strategies, financial instruments, and the urban environment*. Aldershot: Ashgate.
- Kyle, R. C. et al. (2005) *Property management*. Chicago : Dearborn Real Estate Education.
- Lai, W. C. and Ho, C. W., (2000). *Planning buildings for a high-rise environment in Hong Kong*, Hong Kong: HKU Press.
- Lai, W. C., Ho, C. W. and Leung, H. F., (2004). *Change in the use of land*, Hong Kong: HKU Press.
- Leung, A.Y.T. and Yiu, C.Y. (2003) (eds). *Building dilapidation and rejuvenation in Hong Kong*: Hong Kong: City U of Hong Kong Press.
- Nissim, R. (1998). *Land administration & practice in Hong Kong*, Hong Kong: HKU Press.
- Poon, N.T. & Chan, H. W. (1998). (eds.) *Real estate development in Hong Kong*, Hong Kong: PACE.
- Sullivan, W. M. (2005). *Work and integrity: the crisis and promise of professionalism in America*. San Francisco, CA : Jossey-Bass.

Subject Code	CSE290	<b>INTRODUCTION TO GEOTECHNOLOGY</b>
Level	2	
Contact Hours	Lect:21 Tut/Lab: 14 Field Work:7	
Student Effort Hours	120	
Assessment Method	Examination 70% Coursework 30%	
Credit Value	3	
Pre-requisites	Nil	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	C.M. Lee (CSE)	<p><b>Subject Aim:</b></p> <p><i>This subject is intended to:</i></p> <ol style="list-style-type: none"> <li>1. Provide students with instruction on the fundamentals of geotechnology.</li> <li>2. Provide an essential background for studies in soil mechanics, rock mechanics, foundation engineering and geotechnical designs.</li> </ol>
<p><b>Learning Outcomes:</b></p> <p><i>Students will demonstrate their ability to:-</i></p> <ol style="list-style-type: none"> <li>1. Understand and classify the different nature and properties of different types of rocks.</li> <li>2. Understand basic soil and rock mechanics.</li> <li>3. Apply the knowledge to foundation designs and construction.</li> <li>4. Interpret the test results of the soil samplings.</li> </ol>		
<p><b>Syllabus Content:</b></p> <p><i>Mineralogy and Petrology</i> Minerals, Crystals; physical properties of silicate and non-silicate minerals and their identification. Igneous, sedimentary and metamorphic rock, composition, rock classification and their identification. Hong Kong Rocks.</p> <p><i>Surface processes and weathering</i> Weathering of rock, erosion and deposition; hydrological cycle (River, Marine, Wind, Glacial).</p> <p><i>Structural geology</i> Fold, Fault and joints, stereographic projection of joint; map reading and mapping, section of geological structures.</p> <p><i>Site investigation</i> Plan for site investigation; direct and indirect methods for site investigation and sampling, logging of boreholes in situ test (e.g. SPT, CPT, PMT, DMT, DMT,VST); interpretation of test results. Methods of geophysical exploration.</p> <p><i>Geology for engineering</i> Geological application to tunnels. Transportation links, dams, reservoirs and catchments, coastline protection, slope and foundation.</p> <p><i>Soil mechanics</i> Soil classification, 3 phase model, mass –volume relationship, void ratio, porosity, moisture content, specific gravity, unit weight, degree of saturation, soil consistency and Atterberg limits; soil hydraulics; basic concept of shear strength.</p> <p><i>Rock Mechanics</i> Index properties of rock for engineering, classification of rock masses; rock strength and failure criteria; rock slope stability.</p> <p><i>Laboratory and Fieldwork</i> Identification of common minerals and rocks. Field and site visits to illustrate course topics, Mapping.</p>		

**Learning and Teaching Approach:**

Teaching is based on lectures to be supported by laboratory and fieldwork to identify common rocks. Field and site visits to illustrate course topics.

**Assessment:**

70% examination + 30% coursework.

**Reading List:****Recommended:**

Glyth F.G.H. and de Freitas M.H., *A Geology for Engineers*, 7<sup>th</sup> Edition, ELBS, 1984

Allen P.M. and Stephens E.A., *Report on the Geological Survey of Hong Kong*, Government Press, Hong Kong (1971)

Bell F.G., *Engineering Geology and Geotechnics*, Butterworths, 1980

Bell F.G., *Fundamentals of Engineering Geology*, Butterworths, 1983

GEO, *Guide to Rock and Soil Descriptions*, GeoGuide 3, GCO, Civil Engineering Services Department, Hong Kong, 1988

GEO, *Guide to Site Investigation*, GeoGuide 2, GEO, Geotechnical Engineering Office, Civil Engineering Department, 1987

Hoek E. and Bray J., *Rock Slope Engineering*, 3<sup>rd</sup> Edition, The Institution of Mining and Metallurgy: London, 1980

Holmes A., *Principles of Physical Geology*, 3<sup>rd</sup> Edition, Nelson, 1978

Langford R.L., Hans A. and Shaw R., *Karst Geology in Hong Kong*, Geological Society of Hong Kong Bulletin, No. 4, 1990

Legget and Karrow, *Handbook of Geology in Civil Engineering*, McGraw-Hill, 1982

Smith M.J. (1986) *Concise Soil Mechanics*, 4<sup>th</sup> Edition, McDonald and Evons

Rahn P. H. (1996) *Engineering Geology, An Environmental Approach*, Prentice Hall..

West T. R. (1995) *Geology Applied to Engineering*, Prentice Hall.

Subject Code	BRE302	<b>STRUCTURE II</b>
Level	3	
Contact Hours	Lect:21 TU/Lab/Sem:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	AMA290 & BRE204 or equivalent	1. Consolidate the knowledge gained in Structure I and to extend this knowledge to include structural principles as related to design/construction of structural elements in high-rise building. At the end of this subject, the student is expected to be able to design building structural elements and appreciate the design of temporary steelworks.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	C.H. Yam (BRE) H.Q. Fan (BRE) W.F. Tsang (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Recognize load paths in typical multi-storey framed building structures and to compute design loads with due considerations given to a combination of live and dead loads, load and material safety factors.</li> <li>2. Appreciate the structural principles and their applications to the design of permanent building structures (according to BS 5950 for structural steelwork and BS 8110 for reinforced concrete).</li> <li>3. Design permanent building structures, including connections in the case of steelwork, with due consideration of overall safety and serviceability requirements.</li> <li>4. Relate the structural principles and their applications to load and stability analysis of erecting temporary steelworks, in particular cranes of various forms.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<i>Design Concept</i>		
Limit states design: Ultimate limit states and serviceability limit states, load combination.		
<i>Structural principles applied to the use of reinforced concrete design</i>		
Reinforced concrete design to BS8110: singly and doubly reinforced concrete beams, shear reinforcement, simply supported slabs, one-way continuous slab, compression members under axial load and moment, average and local bond stresses.		
<i>Structural principles applied to the use of structural steel design</i>		
Structural steel design to the Code of Practice for the Structural Use of Steel, 2005. Tension members, beams (laterally restrained and unrestrained), columns, beam-columns, welded and bolted connections.		
<i>Temporary works engineering</i>		
Codes, Standards and Regulations related to the design and erection of temporary steelworks.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (tasks and activities designed to achieve learning outcomes):

Interactive Lectures will enable students to:

1. design simple reinforced concrete beams, slabs and columns to BS8110;
2. design simple structural steel beams, columns, beam-columns, welded and bolted connections to BS5950, and
3. appreciate the design and the erection of temporary steelworks.

Tutorial will enable students to:

1. consolidate the structural design concept through design problem-solving assignments and discussions.

Laboratory will enable students to:

1. identify through a demonstration test the structural behaviour of a full-scale simply supported steel beam subjected to bending.

**Assessment strategy** (assessment of student performance resulting from learning tasks):

Assessment comprises of five parts:

1. Problem-solving assignment )
2. Laboratory report ) Coursework
3. Design assignment )
4. Mid-term test )
5. Final examination )

to assess students' ability to design simple reinforced concrete elements and structural steel elements and appreciate the design and the erection of temporary steelworks.

Coursework: 50%

Final Exam.: 50%

**Reading List:**

**Recommended:**

- Moseley W.H., Bungey J.H., Hulse R. *Reinforced Concrete Design*. (1997) 5<sup>th</sup> Edition, Macmillan.
- MacGinley, T.J. and Choo, B.S. (1990) *Reinforced concrete: design theory and examples*, E & FN Spon.
- MacGinley, T.J. and Ang, T.C. (1992) *Structural Steelwork: design to limit state theory*, Boston, Butterworth-Heinemann.
- Nethercot, D.A. (2001) *Limit states design of structural steelwork*, 3<sup>rd</sup> edition, Spon Press.
- Currie B., Sharp R.A. (1990) *Structural Design*, Stanley Thornes
- Marshall W.T. (1978) *Solutions of Problems in Structures*, Pitman
- Marshall W.T. and Nelson H.M. (1977) *Structures*, S.I. Units, Pitman
- Ratay R.T. (1996) *Handbook of temporary structures in construction – Engineering, Standards, Design, Practices and Procedures*. 2<sup>nd</sup> Edition, McGraw-Hill.
- Shaprio H.T., Shaprio J.P., Shaprio L.K. (1999). *Cranes and Derricks*. 3<sup>rd</sup> Edition, McGraw-Hill.

**Supplementary:**

- Structural Use of Concrete - BS 8110: Part 1*, 1997 British Standards Institution.
- Code of Practice for the Structural Use of Steel*, Buildings Department, Government of HKSAR, 2005.
- Steelwork Design Guide to BS 5950: Parts 1 and 2*.
- Construction Sites (Safety) Regulation, Cap. 59.
- Factories and Industrial Undertaking Ordinance, Section 6A & 6B – General Duties.
- Factories and Industrial Undertaking (lifting Appliance and lifting Gear) Regulation.
- Code of practice for Safe use of mobile cranes & tower cranes. OS & H Branch, Labour Dept., 3/1998, Edition.
- BS7121: Pt.1 & 2. Code of Practice for Safe use of mobile cranes & tower cranes. BSI, U.K.

Subject Code	BRE315	<b>PROPERTY VALUATION</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	
Credit Value	3	
Pre-requisites	BRE216 & BRE217	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Understand the nature of the market and property values. 2. Examine the theories of current valuation methods. 3. Solve valuation problems.
Subject Leader/ Lecturer/Dept.	K.F. Man (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
1. Identify and analyse the various frameworks, including physical, economic and legal, that affect property value.		
2. Make comparisons between the choices of the various valuation approaches and methods in the valuation of different types of property for different types of value estimate.		
3. Draw on current valuation methods to solve valuation problems.		
4. Use of valuation in the management and decision making process in real estate development, investment and management.		
<b>Brief Syllabus Content:</b>		
Value and valuation; concepts; economic principles; valuation tables; role of valuer.		
Real property market data sources: information; market trends and cycles.		
Valuation process; valuation report writing.		
Methods of valuation; comparative, investment, residual, cash flow; cost and profits methods.		
Valuation of freehold and leasehold interests; capital and rental values; theories of yield; deferred and varying incomes; extension and renewal of leases.		
Valuation methods adopted in the People's Republic of China and overseas.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*



**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Lectures will be used to provide students with a good understanding of the basic valuation concepts and theories, and will be supplemented with self-learning packages. Wherever possible, case studies will be used to illustrate how principles can be applied into practice. Tutorials will be used by the lecturer and students to discuss valuation problems and assignments while seminars provide suitable forums for presentation by the students. Students are also required to prepare a 'real life' valuation report. Outside speakers may be invited to give talks on current valuation practice in Hong Kong as well as other countries.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Students will be assessed through both coursework and examination.

Coursework will consist of valuation report and problem solving assignments in the form of quiz. Both examination and coursework assess learning outcome 1 to 4.

**Reading List:**

**Recommended:**

Johnson, T. T. (2000) *Modern Methods of valuation of land, houses and buildings*, Estates Gazette

Li Ling-hin, (1999) *Property Valuation in Hong Kong: Theories and Legal Application*, PACE

Millington, A.F., (2000) *An Introduction to Valuation*, Estates Gazette

Appraisal Institute, (2001) *The appraisal of Real Estate*, Chicago, Ill.: Appraisal Institute

Brown, G.T., "Real Estate Cycles Alter the Valuation Perspective", *The Appraisal Journal*, October 1984, 539-549

**Supplementary:**

Issac, D., & Steley, T., (2000) *Property Valuation Techniques*, Macmillan

Baum, A., & Crosby, N., (1995), *Property Investment Appraisal*, Routledge

Davidson, A.W., (1989) *Parry's Valuation and Investment Tables*, Estate Gazette

Subject Code	BRE319	<b>PROPERTY INVESTMENT AND FINANCE</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	
Credit Value	3	
Pre-requisites	BRE216	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i> <ol style="list-style-type: none"> <li>1. Enable students to understand financial theories and the analytical techniques related to investment decisions.</li> <li>2. Foster students' awareness and understanding of property finance and the use of real-estate related financial instruments in today's context.</li> </ol>
Subject Leader/ Lecturer/Dept.	Y.P. Leung (BRE)	
<b>Learning Outcomes:</b>  <i>Students will demonstrate their ability to:-</i> <ol style="list-style-type: none"> <li>1. Interpret and evaluate the financial strength of real estate companies.</li> <li>2. Use financial theories to assess a landed property as an investment asset with regard to its risk and return.</li> <li>3. Draw upon the implications of financial planning on property investment decisions.</li> <li>4. Appraise alternative investments within the context of Hong Kong, including both direct and indirect real estate investments and other financial securities.</li> <li>5. Possess skills to identify, analyse and solve problems on contemporary issues.</li> </ol>		
<b>Brief Syllabus Content:</b>  <i>Property Finance</i> An overview of capital markets and the different financial systems. An introduction of financial accounting including principal accounting concepts, basic accounting process, financial statements analysis and interpretation, and ratio analysis. Financial control and budgeting for Building Management Capital structure and tax implications.  <i>Property Investment</i> Investment concepts and principles; investment vehicles; comparison between property investment and financial investment vehicles. Portfolio analysis, diversification and capital market theory, risk and return in property and stock investments. Market efficiency hypothesis and market performance measurement.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The principles of property finance and investment will be introduced in the lectures from which students can get an understanding of the financial theories and their applications to the landed property in Hong Kong. Presentations and group discussions will be conducted to create an environment that encourages active learning, consolidate understanding and enable application of theories. Wherever possible, guest speakers will be invited to discuss various topical issues with real examples.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Assessment will be based on 50% coursework and 50% examination. The coursework will comprise group presentations of selected articles and individual works of essay writing on topics related to the contemporary issues of the Hong Kong property and financial market. The group presentations will assess the learning outcomes of 1, 2 and 3, and the individual works will assess the learning outcomes of 4 and 5. The examination will assess all the 5 learning outcomes.

**Reading List:**

Brown, G.R. and Matysiak, G.A. (2000). *Real Estate Investment: A Capital Market Approach*, Prentice Hall  
Brealey, R.A. and Myers, S.C. (2004). *Principles of Corporate Finance*, McGraw Hill.  
Mott, Graham (1999). *Accounting for Non-Accountants – A Manual for Managers and Students*, Kogan Page.  
Wild, J.J.; Subramanyam, K.R. and Halsey, R.F. (2003). *Financial Statement Analysis*, 8<sup>th</sup> Edition, McGraw-Hill.  
Brueggeman, W.B. and J.D. Fisher. (1993), *Real Estate Finance and Investments*, Boston: Irwin, 9<sup>th</sup> Edition.  
Brett, M. (1992). *Property and Money*, Estates Gazette.  
Dubben, N. and Sayce, S. (1991). *Property Portfolio Management: An Introduction*, Routledge, New York.  
Ho, Y.K. (Ed), (1991). *The Hong Kong Financial System*, Oxford University Press.  
Lumby, Steve, (1994). *Investment Appraisal and Financial Decisions (5th edition)*, Chapman & Hall.  
Millington, A.F. (1994). *An Introduction to Property Valuation (4th Edition)*, Estates Gazette.  
Norfolk, W. (1981). *Accounting for the Building Trade*, Hutchinson Educational Ltd.

**Supplementary:**

Clauretie, T.M. and Sirmans, C.S. (1996). *Real Estate Finance: Theory and Practice*, New Jersey: Prentice-Hall.  
Fraser, W.D. (1993). *Principles of Property Investment & Pricing (2nd edition)*, Macmillan, Great Britain.  
Calatchi, R.F. and Rosenberg, S.B. (Eds) (1992). *Property Finance: An International Perspective*, London: Euromoney Books.  
Scott, R.H. (Ed), (1986). *Hong Kong's Financial Institutions and Markets*, Oxford University Press.  
Sin, S.F. (1987). *Building Project Finance in Hong Kong: Law and Practice*, Butterworth.  
Upson, A., (1987). *Financial Management for Contractors*, BSP.  
Weston, J.F., (1986). *Managerial Finance*, Dryen Press.

Subject Code	BRE324	<b>ENGINEERING ECONOMICS</b>	
Level	3		
Contact Hours	Lect:21 Sem/Tut:21		
Student Effort Hours	120		
Assessment Method	Coursework 50% Examination 50%		<b>Subject Aim:</b> Engineers are members of one of the principal 'spending professions' in the sense that they carry responsibility for the design and production of infrastructure and the built environment. Economic analysis as applied to engineering and construction is concerned with pursuing the better use of resources, and providing the analytical support for decisions about achieving value for money and choosing between competing alternatives.  <i>This subject is intended to:</i> Equip students with theories and analytical skills necessary to make well informed decisions.
Credit Value	3		
Pre-requisites	Nil		
Co-requisites	Nil		
Exclusions	Nil		
Subject Leader/ Lecturer/Dept.	S.W. Fong (BRE) Y.H. Chiang (BRE)		
<b>Learning Outcomes:</b>  <i>Students will demonstrate their ability to:-</i> <ol style="list-style-type: none"> <li>1. Ability to conduct project appraisal across a combination of project objectives, including, economical, technical, social and environmental.</li> <li>2. Ability to evaluate business opportunities under given constraints, competing objectives and allocated resources.</li> <li>3. Ability to appraise projects critically in order to achieve value for money.</li> <li>4. Ability to work collaboratively with other team members.</li> </ol>			
<b>Brief Syllabus Content:</b>  <i>Construction Economics:</i> Relationship between the construction and engineering sector and the economy. Globalization of capital markets. Demand for construction. Pricing mechanism for construction or engineering projects. Financial aspects of different contract strategies. Design economics. Whole life costing. Value Management.  <i>Principles of Project Appraisal:</i> Time value of money. Net present value and internal rate of return. Project investment appraisal and feasibility studies.  <i>Risk and Uncertainty:</i> Capital budgeting. Risk analysis and estimation of risk premiums, Probabilistic techniques for project appraisal. Weighted average cost of capital.  <i>Budgeting and Cost Control:</i> Cumulative expenditure and revenue curves. Design and production cost control.  <i>Cost and Break-even Analysis:</i> Fixed costs, variable costs. Working capital. Cost control curves. Calculation of break-even point.			

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Lectures are used to present theories and principles of different economic analyses. Case-based learning and tutorials are used to give the students the opportunity to identify and diagnose business problems accurately and effectively across a wide range of engineering or construction domains.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 50% and 50% of the overall mark for the subject respectively. The coursework mark will be based on case projects, seminar presentations and multiple choice test.

**Reading List:**

**Recommended:**

*Essential Texts*

Ashworth A. (2004) "*Cost Studies of Buildings*", Pearson/Prentice Hall

Raftery J. (1994) "*Risk Analysis in Project Management*", E & FN Spon

Kelly J., Morledge R. & Wilkinson S. (2004) "*Best Value in Construction*". Blackwell Science

Kelly J., Male S. & Graham D. (2004) "*Value Management of Construction Projects*", Blackwell Science

Tang S.L. (2003) "*Economic Feasibility of Projects: Managerial and Engineering Practice*", Chinese University Press.

*Reference*

Pilcher R. (1994) "*Project Cost Control in Construction*", BSP

Harris F. & McCaffer, R. (2001) "*Modern Construction Management*", Blackwell Science

Poon T.N.T. & Chan E.H.W. (1998) "*Real Estate Development in Hong Kong*", PACE

Subject Code	BRE326	<b>MAINTENANCE TECHNOLOGY &amp; MANAGEMENT</b>
Level	3	
Contact Hours	Lect:21 Tut/Sem/Lab:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	BRE291 or BRE294	
Co-requisites	Nil	
Exclusions	BRE312	
Subject Leader/ Lecturer/Dept.	Y.S. Wong (BRE)	<p><b>Subject Aim:</b></p> <p><i>This subject is intended to:</i></p> <ol style="list-style-type: none"> <li>1. Strengthen students' building technology knowledge with particular focus on the repair and maintenance disciplines;</li> <li>2. Give students a basic knowledge on how to manage the maintenance works efficiently and effectively.</li> </ol>
<p><b>Learning Outcomes:</b></p> <p><i>Students will demonstrate their ability to:-</i></p> <ol style="list-style-type: none"> <li>1. Identify the causes of common defects and material deterioration.</li> <li>2. Diagnose building defects and propose remedial actions.</li> <li>3. Monitor and supervise the quality of maintenance work.</li> <li>4. Understand the principles and execution of maintenance planning and management.</li> <li>5. Evaluate maintenance needs and execute the work effectively.</li> </ol>		
<p><b>Brief Syllabus Content:</b></p> <p><i>Maintenance Technology :</i>  Deterioration of common building materials – mechanisms and protection  Typical deteriorating factors for reinforced concrete in Hong Kong  Common defects of building elements  Health and environmental issues in building maintenance  Testing and diagnosis of building defects, remedies and prevention</p> <p><i>Maintenance Management &amp; Planning :</i>  Types of maintenance, classifications and selection criteria  Maintenance planning and scheduling: budgeting, resources allocation and timing of maintenance  Alternative methods on executing of maintenance works: direct labour and contract out  Contract procurement for maintenance works  Safety and environmental considerations for maintenance works  Relationship between design and maintenance; feedback on design  Life cycle costing concept on selection of alternatives</p>		
<p><b>Learning and Teaching Approach</b> (<i>tasks and activities designed to achieve learning outcomes</i>):</p> <p>Students will learn this subject through lectures and supplemented by tutorials. Laboratory works, conducted in the University's IC and the departmental laboratory, will also be introduced in order to facilitate learning of building defects and evaluate repair methodology. Tutorials will be conducted in different formats in order to encourage active participation and learning of students, e.g. problem-solving exercises, case studies, presentations.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively.

One piece of coursework will be assigned to each group. The coursework will include a written report (80%) together with a presentation (20%).

**Reading List:**

**Recommended:**

Briffett, C., (1995), *Building Maintenance Technology in Tropical Climates*, Singapore University Press

Buildings Department, HKSAR, (2002), *Building Maintenance Guidebook*, HKSAR

The Chartered Institute of Building, (1990), *Maintenance Management: a Guide to Good Practice*, CIOB

Chanter, B, (1996), *Building Maintenance Management*, Blackwell

Ellis, M., Hutchinson, B. & Barton, J., (1981), *Maintenance and Repair of Buildings*, Newness-Butterworths

Hinks, J. & Cook, G., (1997), *The Technology of Building Defects*, E. & F.N. Spon

Lee, H.S. & Yuen, C.S., (1993), *Building Maintenance Technology*, Macmillan

Lee, R., (1987), *Building Maintenance Management*, 3<sup>rd</sup> ed., BSP Professional Books

**Supplementary:**

Addleson, L., (1992), *Building Failures: A Guide to Diagnosis, Remedy and Prevention*, 3<sup>rd</sup> ed., Oxford

Chudley, R., (1981), *The Maintenance and Adaptation of Buildings*, Longman

Hull, B., (1988), *Non-destructive Testing*, MacMillan

Miles, D., & Syagga, P., (1987), *Building Maintenance – A Management Manual*, Intermediate Technology Publications

Ransom, W.H., (1987), *Building Failures – Diagnosis and Avoidance*, 2<sup>nd</sup> ed., E. & F.N. Spon

Seeley, I.H., (1987), *Building Maintenance*, 2<sup>nd</sup> ed., MacMillan

Subject Code	BRE329	<b>CONSTRUCTION CONTRACT LAW</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE206	1. Introduce aspects of law that have particular relevance to development and construction.
Co-requisites	Nil	2. Provide a practical knowledge of modern development in construction contract law and application of laws and procedures relating to construction contracts and their administration.
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	H.W. Chan (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Evaluate the general principles of development control law and apply them in contract administration;</li> <li>2. Analyse the legal issues in the modern development of law in contract and tort;</li> <li>3. Apply the legal principles to conduct construction contract administration and to evaluate construction contract claims.</li> <li>4. Communicate effectively.</li> <li>5. Possess the ability to engage in life-long learning on Construction Contract Law.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<i>Development control:</i> development process, statutory and non-statutory control.		
<i>Construction contracts:</i> modern development of law in contract and tort; legal interpretation and application in construction contract; bankruptcy and insurance.		
<i>Legal basis for Standard form of contract:</i> characteristics of various standard form of local and international building contracts and sub-contract.		
<i>Duties and responsibilities of the parties to the contract:</i> implications of contract clauses; legal implication in the procedures for instructions, variations, payments and certification.		
<i>Construction claims:</i> evaluation and presentation of claims; contractual and common law remedies; dispute resolution methods.		

*Teaching activities:* Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)



**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Lectures and tutorials will be run throughout the semester period. The lectures and tutorials will not only disseminate the relevant knowledge but also provide guidance for students to search materials for self-study. Tutorial projects will also be set requiring the student to evaluate and apply the relevant law principles and deduce solution for the cases and also to analyze, critically appraise and resolve administrative, organizational and managerial problems.

Key topics will be set for groups of 4-5 students to carry out some research and prepare for presentation and discussion in tutorial class in order to encourage peer group learning and to clarify any difficulties found in lecture and reading. The work also will be set on an individual basis and seek to enhance verbal and written communication skills.

In order to encourage divergent and innovative thinking, the project work will be set as an interactive project based on changing circumstances. This encourages legal analysis and application and also efficient data management. The work will be based on the issues introduced by the teaching but will reward evidence of further reading and private study.

Contact hours include individual or group project supervision. I.T. will be deployed to support teaching.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Students will be assessed by:

- (i) examination, including problem analysis and essay type question, accounting for 70% (one end of semester written paper) and
- (ii) through the medium of coursework, including presentation in class of project assignments, accounting for 30% (1 coursework assignment and 1 short written test)

**Reading List:**

**Recommended:**

Aqua Group, (1996) *Contract Administration for the Building Team*, 8<sup>th</sup> Ed. Oxford: Blackwell Science.

Chappell, D. (2003), *Understanding JCT Standard Building Contracts*, 7<sup>th</sup> Ed., E & FN Spon, London

David Chappell. (1998) *Powell-Smith & Sims' building contract claims*. 3rd Ed. Malden, Mass.: Blackwell Science.

Murdoch, J. & Hughes, W. (2002) *Construction Contracts Law and Management*, 3<sup>rd</sup> Ed., Spon Press.

Poon N.T. & Chan E.H. (1998) *Real Estate development in Hong Kong*, Pace Ltd. H.K.

Thomas, R. (2001), *Construction Contract Claims*, 2<sup>nd</sup> Ed., Macmillan, U.K.

Uff, J. (2002) *Construction law: law and practice relating to the construction industry*, 8<sup>th</sup> Ed. Sweet & Maxwell, UK.

Furst, S. (2001), "Keating on Building Contracts", 7<sup>th</sup> Ed., Sweet & Maxwell, London.

**Supplementary:**

Powell-Smith, V. (2000) *Powell-Smith & Furnston's Building Contract Casebook*, Blackwell Science: Oxford.

Wallace, Ian Norman Duncan. (1995), "Hudson's Building & Engineering Contracts: including the duties and liabilities of architects, engineers and surveyors", 11th Ed, London : Sweet & Maxwell.

Ramus, J.W(1996) *Contract Practice for Quantity Surveyors*. 3rd ed., Oxford : Heinemann Newnes,

Hong Kong Government, (1988) *Town Planning in Hong Kong*, H.K. Government Printer

Latham, M. (1994), "Constructing the Team", HMSO.

Ashworth, A., (2002) *Willis's Practice and Procedure for the Quantity Surveyor*, 11<sup>th</sup> Ed. Malden, M.A.: Blackwell Science.

Subject Code	BRE336	<b>DEVELOPMENT CONTROL LAW</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	
Credit Value	3	
Pre-requisites	BRE206	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	K.K. Lo (BRE)	<p><b>Subject Aim:</b></p> <p><i>This subject is intended to:</i></p> <ol style="list-style-type: none"> <li>1. Build up practical knowledge on property development control law and current measures imposed by government affecting the development and use of property.</li> </ol>
<p><b>Learning Outcomes:</b></p> <p><i>Students will demonstrate their ability to:-</i></p> <ol style="list-style-type: none"> <li>1. Comprehend the importance of the planning, building law and other aspects of legislation together with other non-statutory requirements on properties for evaluation of impacts on property development and redevelopment.</li> <li>2. Apply their learnt knowledge on the integrated approach to legal control of new development and existing properties in the course of development and re-development process.</li> <li>3. Conduct a most appropriate planning on design and construction of property amongst other choices on the basis of latest legislative issues.</li> <li>4. Analyse and interpret the liabilities of professionals in the course of property development and re-development.</li> <li>5. Function on multi-disciplinary teams as capacity of discipline leader.</li> <li>6. Communicate effectively with other players of development or re-development teams.</li> </ol>		
<p><b>Brief Syllabus Content:</b></p> <p><i>Planning Ordinance:</i> Planning law affecting property development; function of the Town Planning Board, the Appeal Board and Land Development Corporation; zoning plans and development control administration; enforcement, appeal and enquiries process.</p> <p><i>Buildings Ordinance:</i> Development and building control through administrative measures, regulations and codes of practice; control and enforcement of illegal and dangerous structures; role of Authorized Person, Registered Structural Engineer and Registered Contractor.</p> <p><i>Government Lease and Conditions:</i> Development conditions; control and enforcement; modification and renewal.</p> <p><i>Professional Liabilities:</i> Professional licensing and liabilities; modern development in the law of contract and tort, post-construction liabilities and insurance.</p> <p><i>Other Related Laws:</i> Environmental control laws; law relating to dilapidation and occupation of building; and Practice Notes for building professionals and registered contractors.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The basic concept of law and critical procedures related to development control will be explained in lectures. Tutorial and seminars will be arranged for discussion in specific topic set for the students in order to facilitate two-way communication and to understand the students' difficulties and needs. Case study projects will be assigned to small group of 4-5 students to encourage students to take initiation to research and explore options, to tackle problem and to benefit from peer group learning. The project will emphasis on the application of knowledge and to understand the integration of the subject material with other subjects in a development project. Experience practitioners will be invited to deliver lectures and seminars for updated input on the current practice.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

The coursework continuous assessment will account for 50% and the written examination will account for 50%. The marking will emphasis assessing on both the process and submitted product. Students are encouraged to explore options of property development within the constraint of development law through project work and tutorial assignments. Questions will be asked during presentation to ensure the students have achieved the learning outcomes.

**Reading List:**

**Recommended:**

Bacon, N. (1996) *Conveyancing 2<sup>nd</sup> Edition*, Hong Kong: FT Law & Tax Asia Pacific.

Buildings and Lands Department (1991), *Building Control in Hong Kong*, HK Government Printer

H.K. Government (1991), *Consultative Document on Comprehensive Review of Town Planning Ordinance*, HK Government Printer

H.K. Government, *Buildings Ordinance and Regulations*, HK Government Printer

H.K. Government, *Planning Ordinance and Regulations*, HK Government Printer

**Supplementary:**

Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Contractors, latest edition, Buildings Department

Ding, Li-Yun (1995), Development process of Real Estate in the PRC, *Symposium of Real Estate*, PRC Peoples' University Publishing House, pp.204-210. (CHINESE TEXT)

H.K. Government *Town Planning in Hong Kong*, HK Government Printer

Built Environment at the crossroads (1996) *the 1996 Fourth World Congress of Building Officials, Hong Kong*, WOBO, HK

Subject Code	BRE337	<b>PROPERTY LAW</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	BRE206	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Further develop and apply knowledge and reasoning skills; 2. Evaluate and apply property law to factual situations; 3. Examine law relating to property transactions, land use control and compensation
Subject Leader/ Lecturer/Dept.	H.W. Chan (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Identify and evaluate the key concepts and principles of Hong Kong land law and conveyancing.</li> <li>2. Compare and contrast the different property concepts.</li> <li>3. Apply knowledge and reasoning skills to solve legal problems relating to ownership and land use control.</li> <li>4. Explore and evaluate problem-solving solutions in the context of land use and development.</li> <li>5. Possess the ability to evaluate property law with reference to contemporary issues.</li> <li>6. Communicate effectively.</li> </ol>		
<b>Brief Syllabus Content:</b>		
The meaning of Real Estate in Hong Kong. [Interests in land; the landholding system in Hong Kong; land transactions].		
Acquisition, transfer and extinction of interests in land. [Vendor/purchaser transactions; title to land' mortgages and charges; sale and purchase agreements; requisitions on title; assignments; stamp duty; registration].		
The private control of land use. [Consent and non-consent schemes the government's right to re-enter under the government lease; easements; land covenants].		
Public control of land use. [Planning and building controls; land resumption]		
Building Management Law.		
Landlord and Tenant Law. [essentials of a lease; distinction between a lease and a licence; creation and form of leases; express and implied terms, especially rent and repair covenants; remedies for breach of covenant; termination of leases; security of tenure and assessment of rent.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The sequence of learning in this module is organized around two themes, and three topics:

1. Acquisition, transfer and extinction of interests in land in Hong Kong.
2. The control of land use.

The topics are:

- Vendor/purchaser transactions.
- The relationship between owners and managers of multi-storey buildings
- The relationship of landlord and tenant.

The themes and topics are developed through problem-solving activities designed to develop the higher order cognitive skills of analysis, argument and critical judgment. Where appropriate, role-plays are used to develop skills and enhance awareness of the role of law in property decisions in Hong Kong.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Assessment is designed to contribute to learning, and to determine the extent to which a student has achieved the learning objectives in the following ways:

1. In-class test, comprising questions to test attainment of legal concepts.
2. A 2 hour examination comprising a combination of breadth and depth problems designed to assess knowledge, reasoning ability, and critical judgment.

**Reading List:**

**Recommended:**

Cruden, G. (1998) *Land Compensation and Valuation in Hong Kong*, 2<sup>nd</sup> edition, Butterworths.

Kent, P., Merry M. & Walters M. (2002) *Building Management in Hong Kong*, Lexis Lexis Butterworths.

Nield, S. (1997) *Hong Kong Land Law*, Longman Asia/FT Law & Tax.

Merry, M. (1997) *Hong Kong Tenancy Law*, Butterworths.

Murphy, W.T. & Robert, S. (1998), *Understanding Property Law*, 3<sup>rd</sup> edition, Sweet & Maxwell

Sihombing, J. & Wilkinson, M. (2002) *A Student's Guide to Hong Kong Conveyancing*, 4<sup>th</sup> edition, Butterworths.

**Supplementary:**

*Authorized Hong Kong Law Report and Digest*, Sweet & Maxwell

Government Publications

*Halsbury Laws of Hong Kong*, Butterworths

Hong Kong Cases, Butterworths

Subject Code	BRE341	<b>PROPERTY MANAGEMENT I</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	Nil	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i> <ol style="list-style-type: none"> <li>1. Introduce to the students the principles and practice of property management.</li> <li>2. Focus on the application of the principles to the property management services.</li> <li>3. Give the students a basic knowledge for managing buildings in the private and public sectors.</li> <li>4. Help them to develop management skills in practice.</li> </ol>
Subject Leader/ Lecturer/Dept.	C.M. Hui (BRE) H.H. How (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Review the fundamentals of property management.</li> <li>2. Identify the business and work environment in property management services in Hong Kong.</li> <li>3. Apply the principles and practice necessary for efficient planning and administration of property management.</li> <li>4. Synthesize their knowledge to solve problems in property management.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<i>Managing Marketing of Property Management Services</i>		
An introduction to the nature of property management and the market for property management services.		
An analysis of existing services; types of buildings and estates; internal organization of property management business; marketing of property management services.		
<i>Managing Common Areas of Owner's Property</i>		
Pre-management planning before take-over of premises: Organizational principles and establishment of a new management office; testing of building services; identifying defects of premises.		
Provision of services after take-over of premises: Staff management; financial management; security services; fire services installations; water and electricity supply; cleansing services; air-conditioning and so on.		
Environmental and conservation issues in property management: energy saving; control of illegal structures and estate modernization.		
<i>Managing Leased Property</i>		
Leasing and tenancy arrangements: Contractual and statutory lease conditions; tenancy renewals; tenant mix rent reviews; Landlord and Tenant (Consolidation) Ordinance.		
<i>Managing Owner and Tenant Relations</i>		
Formation of Owners' Incorporation: Deed of Mutual Covenant; Building Management Ordinance; consultation channels with landlords and tenants.		
<i>Managing Risk and Liability</i>		
Statutory and professional liability in property management: Insurance; negligence; nuisance; employer's liability and contractor's liability.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The principles of property management will be introduced in lectures. Application of the principles to solve property management problems will be taught in case studies, role play and management games. Discussion will be facilitated in tutorial by small group studies, which provide opportunities for students to deliver their discussion results and thinking. Lectures, seminars, laboratory as well as tutorials will form a basic skeleton for learning the subject.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively. The coursework mark will be based on the assignments and presentation.

Two pieces of equally weighted coursework will be set out to assess the understanding of the students on this subject during the period of teaching and learning.

**Reading List:**

**Recommended:**

Kyle, R. C. (1995) *Property Management*. Chicargo: Real Estate Education Co.

Loo, F.K. (1992) *A Guide to Effective Management in Hong Kong*. The Hong Kong University Press.

**Supplementary:**

Bachner, P.J. (1991) *The Guide to Practical Property Management*. Mc Graw-Hill, Inc.

Cushman, RF. & Rodin, N.I. (1985) *Property Management Handbook: A Practical Guide to Real Estate Management*. U.S.A.: John Wiley & Sons Inc.

Edmington, G. (1997) *Property Management: A Customer Focussed Approach*. England: Macmillan.

Downs, A. (1991) *Principles of Real Estate Management*, Institute of Real Estate Management.

Scarett, D. (1983) *Property Management*. London: E. & F.N. Spon Ltd.

Subject Code	BRE345	<b>MEASUREMENT, DOCUMENTATION AND ESTIMATING</b>	
Level	3		
Contact Hours	Lect:21 Sem/Tut:21		
Student Effort Hours	120		
Assessment Method	Coursework 40% Examination 60%		<b>Subject Aim:</b>
Credit Value	3		<i>This subject is intended to:</i>
Pre-requisites	BRE291		1. Equip students with the skills and knowledge to measure buildings and property accurately and efficiently and produce appropriate documentation to obtain a competitive price.
Co-requisites	Nil		
Exclusions	Nil		
Subject Leader/ Lecturer/Dept.	M.F. Ho (BRE)		
<b>Learning Outcomes:</b>			
<i>Students will demonstrate their ability to:-</i>			
<ol style="list-style-type: none"> <li>1. Prepare, examine and compare documentation to be used in procurement of building works and property.</li> <li>2. Quantify and describe new building works and alteration work.</li> <li>3. Analyse and synthesis composition of unit rates and an appreciation of the cost.</li> </ol>			
<b>Brief Syllabus Content:</b>			
<p><i>Measurement and documentation of new building work, alteration work and property :</i></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>Conventions used in recording dimensions and descriptions.</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>Communication between buyer, designer, construction and estimator; types of documentation and their uses; preparation and uses of bills of quantities and specifications; preambles and preliminaries.</p> <p><i>Estimating:</i></p> <p>Factors influencing the pricing of new works and property.</p> <p>Tender documentation: tendering with or without bills of quantities. Contractor selection: competition or negotiation. The role of the estimator.</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> <p>Head office and company overhead costs.</p> <p>Detailed analysis of the method statement, programme of works etc; and their influence on the preliminary costs required for the project.</p>			

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*



**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The theory and rationale will be delivered in lecture periods. Practical experiences will be relocation in the tutorial periods.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 40% and 60% of the overall work of the subject respectively. The coursework grade will comprise two assignments.

The coursework for this subject will be very practical in nature. The first assignment will require the students to prepare an appropriate pricing document based on measured quantities. This will be based on background information which is mainly in the form of drawings and specification.

The second assignment will require the students to price the document given in the first assignment.

Both pieces of coursework will be undertaken on an individual basis.

**Reading List:**

**Recommended:**

Aqua Group (1990) *Tenders and Contracts for Building*, BSP Professional Books, Oxford

Aqua Group (1992) *Precontract Practice for the Building Team*, BSP Professional Books, Oxford

Holroyd T.M. (2000) *Principles of Estimating*, Thomas Telford, London

Picken D.H. & Drew D.S. (1996) *Building Measurement in Hong Kong: Worked Examples* Longman Asia Ltd., Hong Kong

Royal Institution of Chartered Surveyors (1979) *Hong Kong Standard Method of Measurement for Building Works* 3rd Edition, Royal Institution of Chartered Surveyors (Hong Kong Branch)

Turner D. (1983) *Quantity Surveying Practice and Administration*, Godwin, London

Subject Code	BRE346	<b>INTEGRATED PROJECT IIA</b>
Level	3	
Contact Hours	PW:140	
Student Effort Hours	154	
Assessment Method	Coursework 100%	<b>Subject Aim:</b>
Credit Value	4	<i>This subject is intended to:</i>
Pre-requisites	BRE218 or equivalent	1. Encourage the critical investigation, analysis and synthesis in solving problems in the professional context.
Co-requisites	Nil	2. Provide an environment for the student to develop skills in identifying and solving problems and allows the integration of knowledge gained in separate subject areas.
Exclusions	Nil	3. Promote the students' understanding of the interdisciplinary and course specific nature of the development and construction process and develops team working.
Subject Leader/ Lecturer/Dept.	S.W. Fong (BRE)	4. Develop an outlook for construction and surveying practices in other countries.
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
1. identify and diagnose problems in the development and construction process, including social, technical, economical and environmental issues.		
2. integrate and create knowledge and skills acquired in various subject areas and to solve problems in a professional manner.		
3. keep abreast current and future development of the professional surveying industry in Hong Kong, Asia Pacific Region and worldwide and make appropriate use of such knowledge in proposed analysis and actions.		
4. communicate and work effectively with members from same or different professions, including effective oral/written presentation of analysis, justification of recommended actions, and persuasive messages intended to affect the perceptions of others.		
5. appreciate the differences in construction or surveying practices between Hong Kong and other countries through an in-depth study.		
<b>Brief Syllabus Content:</b>		
A series of construction and property related project scenarios will be set to replicate a situation which could be met in practice. Sometimes the restrictions of the study environment will require the scenario to be modified. The projects will require students to make use of and integrate knowledge from previous and current subject modules. Each project will include elements of group and individual work. The projects require students to develop solutions creatively and to present recommendations systematically. Comparative study between construction and surveying practices in Hong Kong and other countries.		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):		
The projects will provide a student centered problem-based learning approach in a professional or industrial setting. The projects will be delivered by a team of project tutors, with overall co-ordination by one member of staff to ensure continuity and relevance of project subject matter. Project material will be co-ordinated at the start of each academic year to ensure quality and consistency of the project information given to the students. This subject will be timetabled one day per week throughout 3 semesters of year 2.		
An important part of the subject is the comparative study of the construction and real estate industry of selected countries and Hong Kong. A Study Tour or equivalent is to be organized by students.		
<b>Assessment strategy</b> ( <i>assessment of student performance resulting from learning tasks</i> ):		
The subject will be assessed by projects, presentations and reflective journals. Each project will contain tasks such that marks can be awarded for group work as well as for individual work.		
<b>Reading List:</b>		
Construction and Management-related Journals, Library Databases, Statistics, Module Texts and Internet Resources		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

Subject Code	BRE347	<b>URBAN AND CONSTRUCTION ECONOMICS</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 40% Examination 60%	
Credit Value	3	
Pre-requisites	BRE216	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Enable students to understand economic theories and analytical techniques related to real property and urban land issues. 2. Enable students to understand the factors affecting construction cost.
Subject Leader/ Lecturer/Dept.	T.I. Lam (BRE) Y.P. Leung (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
1. Use relevant economics principles to develop the ability to analyse the real estate market and urban economy. 2. Utilise skills to synthesise coherent arguments and policy implications to support decision-making process in urban development policies. 3. Analyse the factors affecting construction cost at an industry and project level. 4. Compile cost plan for a given project using cost records. 5. Communicate principles, theories and cost data effectively.		
<b>Brief Syllabus Content:</b>		
<u>Economic Theories &amp; Concepts underlying Urban Land Issues</u>		
Nature of land economics, land policies and land administration. Theories of urban growth and urban structure, and economics of urbanization. Theories of land rent and urban land use pattern. Analysis of real estate market. Techniques of economic analysis of urban land development and redevelopment. Economics of property rights and public sector intervention.		
<u>Construction Economics</u>		
Role of construction in the economy. Demand and Supply for construction. Productivity. Types of client and the client's brief. Compilation and use of cost data. Cost indices. Price determination of construction project. Design Economics. Cost Planning. Introduction to Cost Modelling.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Experimental work:**

Not applicable

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The main theory and concepts will be delivered in lectures, with application and discussion being covered in seminars and tutorials. Guest speakers may be invited where possible to instill latest market trend. The intention is to create an environment that encourages active learning, consolidate understanding and enable application of the theories.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Assessment will be based on examination (60%) and coursework (40%). The coursework will include:-

<u>Assessment Tool</u>	<u>Assessment of Outcome(s)</u>
(i) Essay writing*,	1, 2, 3 and 5
(ii) Exercises**; and	3 and 4
(iii) Seminar presentation.	5

\*Group projects on topics assigned related to the contemporary issues within the context of Hong Kong will be used to assess students' ability to analyse the real estate and construction market and to appreciate the factors influencing the real property and urban land policies

\*\*Exercises will be conducted on cost planning and cost adjustment using indices

**Reading List:**

Balchin, P.N. & Kieve, J.L., (1988) *Urban Land Economics*, London: MacMillan  
 Barr, N., (1993) *The Economics of the Welfare State*, London: Weidenfeld and Nicolson  
 Briscoe, G., (1988) *The Economics of the Construction Industry*, London: Mitchell  
 Cheshire, P.C. Evans, A.W. (eds), (1991) *Urban and Regional Economics*, London: Edward Elgar  
 Darlow, C., (1988) *Valuation and Development Appraisal*, London: Estate Gazette Ltd.  
 Ferry, D. & Brandon, P.S., (1991) *Cost planning of Buildings*, 6th Edition, London: BSP Professional Books  
 Harvey, J. (1992) *Urban Land Economics: The Economics of Real Property*, London: MacMillan  
 Hui, C.M., Chan, P.C., Wong, K.W., Wong K.C. & Leung, Y.P. (2000), *The Supply of Land for Housing in Hong Kong*, Research Monograph, The Hong Kong Polytechnic University  
 Mills, E.S. & Hamilton, B.W. (1992), *Urban Economics*, N.Y.: Harper Collins  
 Myers D. (1994), *Economics and Property*, London: Estate Gazette  
 O'ullivan, A., (1993) *Urban Economics*, London: Irwin  
 Raftery, J., (1991) *Principles of Building Economics*, London: BSP Professional Books  
 Ashworth A., (1999) *Cost Studies of Buildings*, London: Longman

**Supplementary:**

Broadway, R., (1984) *Public Sector Economics*, Oxford: Basil Blackwell  
 DiPasquale, D. & Wheaton, W.C. (1996) *Urban Economics and Real Estate Markets*, London: Prentice Hall  
 McMahon, J., (1989) *Property Development*, London: McGraw-Hill  
 Newell, M., (1977) *An Introduction to Economics of Urban Landuse*, London: Estate Gazette  
 Tolley, G.S. & Thomas V. (ed), (1987) *The Economics of Urbanisation and Urban Policies in Developing Countries*, Washington: The World Bank  
 Tse R., (1992) *Hong Kong Housing Market*, H.K.: Commercial Press  
 Zerbe, R.O. & Divley, D.D. (1994) *Benefit-cost Analysis: In Theory and Practice*, NY: Harper Collins  
 Smith, J. (1998) *Building Cost Planning for the Design Team*, Deakin University Press  
 Seeley, I. (1996) *Building Economics*, Macillan  
 Pilcher, R. (1994) *Project Cost Control in Construction*, Blackwell Scientific Publication  
*Hong Kong Statistics* (current issues), Hong Kong SAR Government

Subject Code	BRE349	<b>BUILDING SERVICES I</b>
Level	3	
Contact Hours	Lect:21 TU/Sem:21 Lab:8	
Student Effort Hours	120	
Assessment Method	Coursework 40% Examination 60%	
Credit Value	3	
Pre-requisites	BRE291	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i> <ol style="list-style-type: none"> <li>1. Provide students with an overview of the various building services engineering systems in modern buildings,</li> <li>2. Understand the basic design intent of various building services systems and their integration with the building fabric and architectural features.</li> </ol>
Subject Leader/ Lecturer/Dept.	W.K. Kong (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Possess a knowledge of the system configuration and operation of various building services systems.</li> <li>2. Relate how different building services systems can help to control and improve the indoor environment.</li> <li>3. Identify the relationships between the design of building services systems and the overall building design.</li> <li>4. Appreciate the cost and value relationship on the selection of appropriate building services systems.</li> <li>5. Relate issues on environmental impact to the design of building services systems and overall building design.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<p>Plumbing &amp; Drainage Water supply and drainage system for high rise buildings. Simple design on pipe sizing for plumbing and drainage pipes. Sewage treatment process.</p> <p>Electricity: Assessment of electricity demand. Lightning protection. Earthing provisions.</p> <p>HVAC/MVAC: Assessment on the efficiency of air-conditioning process. Large scale air conditioning systems configuration and operation.</p> <p>Internal transportation: The configuration and operation of lifts and escalators. Assessment to the quality of services for life operation.</p> <p>Fire Services: Prevention, detection and suppression systems. Integration of fire services system to other building services systems.</p> <p>An introduction to the measurement for building services installations.</p> <p>Environmental issues: the effects of external environments to the design of building services system. An introduction to environmental impact assessment and ISO 14000.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The learning and teaching approaches for the subject comprises lectures, tutorials and laboratories.

Lectures aims at delivering the basic core of concepts whilst ideas and operations will be further elaborated and discussed in the tutorials. Presentation by students during tutorials on selected topics will also be arranged. Laboratories are provided to allow students to relate theories and concepts to real situation.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Assessment will be in the form of written examination, oral presentation, case study report and laboratories.

Written examination aims to assess students' ability to apply concepts learned for solving problems on building services design and operation.

Oral presentations on specific topics on building services serves to assess students' understanding to the topics chosen.

Case study report aims to consolidate students' knowledge and relating design of building services system to the overall building design.

Laboratories allow students to relate theories to actual practices and operations.

The split between coursework and examinations will be 40/60.

**Reading List:**

**Recommended:**

Burberry P. (1997) *Environmental & Services*, 8<sup>th</sup> Edition, Longman Scientific & Technical

Chadderton D.V. (2000) *Building Services Engineering*, 3<sup>rd</sup>, E & F.N. Spon

Chadderton D.V. (1997) *Air Conditioning: a practical approach*, E & F.N. Spon

Hall F. (1994) *Building Services & Equipment*, 3<sup>rd</sup> Vols. 1 to 3, Longman

Wise A.F.E. (1995) *Water, Sanitary and Waste Services for Buildings*

Greeno R. (1997) *Building Services, Technology and Design*, Longman

**Supplementary:**

HKSAR (1996) *Code of Practise for the Provision of Means of Escape Case of Fire*

HKSAR (1994) *Code of Practice for Minimum Fire Services Installations and Equipment*

HKSAR (1995) *Code of Practice for the Provision of Means of Access for Fire-fighting and Resure*

H.K. SAR Government, *Building Ordinance and Regulations* CAP.123

NFPA (1997) *Fire Protection Handbook*, 18<sup>th</sup> Edition

Stoecker W.F. & Jones J.W. (1982) *Refrigeration and Air Conditioning*, McGraw Hill

BRE (various) *Digests and Current Papers*. Building Research Establishment, Garston, Watford, U.K.

Various Standards and Codes published by British Standard Institution (BSI)

Subject Code	BRE350	<b>PROJECT MANAGEMENT AND PROCUREMENT</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 40% Examination 60%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE2921	1. Extend students' understanding of management principles and develop the knowledge of project management and procurement in the construction industry.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	W.M. Chan (BRE) P.C. Chan (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Apply knowledge of quality, safety and environmental management for construction projects.</li> <li>2. Use planning techniques.</li> <li>3. Negotiate and resolve conflicts between management and employees.</li> <li>4. Communicate with others in a clear and articulate manner.</li> <li>5. Present ideas and arguments verbally in formal presentations, seminars, and role play.</li> <li>6. Work with others and take responsibility for an agreed area of a shared activity.</li> <li>7. Identify and propose solutions to problems.</li> <li>8. Identify the different forms of procurement and assess their impacts on the success of a project.</li> <li>9. Describe the principles underlying the choice of appropriate procurement systems.</li> <li>10. Apply and compare alternative procurement systems for all types of construction work.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<b><i>Quality, Safety and Environmental Management</i></b>		
Quality assurance system, safety management system and environmental management.		
<b><i>Human Resources Management</i></b>		
Recruitment, selection and engagement of personnel in construction organizations, and industrial relations.		
<b><i>Planning and Programming Techniques</i></b>		
Planning and programming techniques including bar chart, initial path analysis and line of balance.		
<b><i>Construction Procurement</i></b>		
<ul style="list-style-type: none"> <li>● The nature of building process, models of the process.</li> <li>● Categorization of procurement systems.</li> <li>● Alternative procurement systems such as traditional sequential, traditional accelerated, competitive design and build, enhanced design and build, novated design and build, management contracting and construction management, guaranteed maximum price and target cost contracting, and public private partnership.</li> <li>● Choice of appropriate procurement methods, allocation of risks and liabilities of the major parties to the arrangement.</li> <li>● Construction partnering and its impact on procurement.</li> <li>● Subcontracting management in construction.</li> </ul>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach:**

Lectures will be used to introduce systems and techniques whilst the small group work will be used for the application of management skills through role-play and seminar presentation.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 60% and 40% of the subject respectively. The coursework assessment shall be based on role-play, seminar presentation, seminar discussion and assignments.

**Reading List:****Recommended:****Project Management**

Chan A.P.C., Wong F.K.W., Yam M.C.H., Chan D.W.M., Ng J.W.S. and Tam C.M. (2005). *From Attitude to Culture - Effect of Safety Climate on Construction Safety*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-432-5, 160 pages.

Chan P.C., Wong K.W., Lam T.I. and Choi C.W. (2004) *Quality Relationships in Public Housing of Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-426-0, 77 pages.

Harris F. and McCaffer R. (2001) *Modern Construction Management*, 5<sup>th</sup> Edition, Blackwell Science: Oxford

Lam T.I., Wong K.W., Chan P.C., Shea C.Y. and Poon C.K. (2004) *Development of a Quality Assessment Mechanism for Private Residential Building Projects in Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-421-X, 69 pages.

Lavender S. (1996) *Management for the Construction Industry*, Longman: UK

Tang S.L., Ahmed S.M., Aoieong R.T. and Poon S.W. (2005) *Construction Quality Management*, Hong Kong University Press: Hong Kong

Tang S.L., Poon C.S., Ahmed S.M. and Wong F.K.W. (2003) *Modern Construction Project Management*, 2<sup>nd</sup> Edition, Hong Kong University Press: Hong Kong

Walker Anthony (2002) *Project Management in Construction*, 4<sup>th</sup> Edition, Blackwell Sciences: Oxford

Wong K.W. (1998) *Bamboo Scaffolding - Safety Management for the Building Industry in Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, 58 pages.

Yam M.C.H., Wong F.K.W., Chan A.P.C., Cheung A.A.C., Chan D.W.M., Chan K.W.Y. and Chan J.H.L. (2007). *Safety Considerations for Residential Building Repair and Maintenance Works on Facades in the Design Phase in Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, 148 pages, ISBN 978-962-367-515-4, August 2007.

Chan, A.P.C., Wong, F.K.W., Chan, D.W.M., Chan, E.H.W., Cheung, E., Kwok, A.W.K., Lam, E.W.M., Yam, M.C.H. and Yiu, E.C.Y. (2007). *Construction Safety Involving Working at Height for Residential Building Repair and Maintenance*, Summary Report, Construction Industry Institute – Hong Kong, Research Report No. 9, 52 pages, ISBN 978-988-99558-1-6, November 2007.



## **Construction Procurement**

Chan A.P.C. and Chan D.W.M., Editors (2004). *Proceedings of the CII-HK Conference 2004 on Construction Partnering: Our Partnering Journey - Where Are We Now, and Where Are We Heading?*, Construction Industry Institute – Hong Kong, 9 December 2004, Hong Kong, China, ISBN 988-98153-2-X, 206 pages.

Chan, A.P.C., Chan, D.W.M., Chiang, Y.H., Tang, B.S., Chan, E.H.W. and Ho, K.S.K. (2004). Exploring Critical Success Factors for Partnering in Construction Projects. *Journal of Construction Engineering and Management*, ASCE, 130(2), March/April, 188-198.

Chan A.P.C., Chan D.W.M., Fan L.C.N., Lam P.T.I. and Yeung, J.F.Y. (2004). *A Comparative Study of Project Partnering Practices in Hong Kong*, Summary Report, Construction Industry Institute – Hong Kong, Research Report No. 1, ISBN 988-98153-1-1, 40 pages.

Chan, A.P.C., Chan, D.W.M. and Ho, K.S.K. (2003). An Empirical Study of the Benefits of Construction Partnering in Hong Kong. *Construction Management and Economics*, 21(5), July, 523-533.

Chan, A.P.C., Chan, D.W.M. and Ho, K.S.K. (2003). Partnering in Construction: Critical Study of Problems for Implementation. *Journal of Management in Engineering*, ASCE, 19(3), July, 126-135.

Chan A.P.C., Chan D.W.M., Ho K.S.K., Chiang Y.H., Chan E.H.W. and Tang B.S. (2002) *An Analysis of Project Partnering in Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-363-9, 96 pages.

Chan A.P.C., Ho D.C.K., and Tam C.M. (2003) *Evaluation of Integrated Procurement Systems in Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-286-1, 75 pages.

Chan A.P.C. and Yu A.T.W. (2003) *Construction Process Improvement – A Case Study of the North District Hospital*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-287-X, 63 pages.

Chan A.P.C and Yung E.H.K. (2003) *Procurement Selection Model for Hong Kong*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, ISBN 962-367-285-3, 143 pages.

Chan D.W.M., Chan A.P.C., Lam P.T.I., Lam E.W.M. and Wong J.M.W. (2007). *An Investigation of Guaranteed Maximum Price (GMP) and Target Cost Contracting (TCC) Procurement Strategies in Hong Kong Construction Industry*, Research Monograph, Department of Building and Real Estate, The Hong Kong Polytechnic University, 152 pages, ISBN 978-962-367-593-2, October 2007.

Chan D.W.M., Chan A.P.C., Lam P.T.I., Lam E.W.M. and Wong J.M.W. (2007). Evaluating Guaranteed Maximum Price and Target Cost Contracting Strategies in Hong Kong Construction Industry. *Journal of Financial Management of Property and Construction*, 12(3), December, 139-149.

Franks J. (1998) *Building Procurement Systems – A Client's Guide*, 3<sup>rd</sup> Edition, Addison Wesley Longman and The Chartered Institute of Building.

Masterman J.W.E. (2002) *An Introduction to Building Procurement Systems*, 2<sup>nd</sup> Edition, E&FN Spon, London.

Turner A. (1990) *Building Procurement*, UK MacMillan

Subject Code	BRE351	<b>CONTRACT ADMINISTRATION</b>
Level	3	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	<b>Subject Aim</b>  <i>This subject is intended to:</i>  Introduce students to the legal aspects of construction contracts and provide them with the ability to critically apply the practices and procedures involved.
Credit Value	3	
Pre-requisites	Nil	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	L.Y. Tang (BRE)	
<b>Learning Outcomes</b>		
<i>Students will demonstrate their ability to:</i>		
<ol style="list-style-type: none"> <li>1. Apply the general principles of contract law to construction contracts.</li> <li>2. Interpret the contractual procedure, rights and duties stipulated in a construction contract.</li> <li>3. Provide solutions to routine and unfamiliar contractual problems.</li> <li>4. Gather and analyse information relating to contemporary contractual issues.</li> <li>5. Communicate effectively with legitimate reasoning.</li> <li>6. Reflect on and review their studies in the contract of the construction industry.</li> </ol>		
<b>Brief Syllabus Content</b>		
<ul style="list-style-type: none"> <li>• Contractual and common law principles and practice.</li> <li>• Characteristics of various standard forms of local and international construction contracts.</li> <li>• Role and relationship of the parties under different contractual arrangements.</li> <li>• Procedure for instructions, variations, payments, claims and certification.</li> <li>• Responsibility of the contract administrator.</li> </ul>		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> )		
Lectures, tutorials and seminars are conducted throughout the semester. A lecture schedule outlining the topics to be introduced is distributed to the students at the beginning of the semester. During the lecture period topics are introduced, often with reference to professional journal papers. In tutorial periods, students are required to discuss real-life cases related to the lecture topic and during seminars students are required to present the findings of an assigned research topic.		
<b>Assessment strategy</b> ( <i>assessment of student performance resulting from learning tasks</i> )		
An end of semester 2 hour final examination accounting for 70% of the overall assessment.		
Coursework comprising one seminar presentation on a contractual issue, accounting for 30% of the overall assessment.		
<b>Reading List</b>		
Hills, M.J. (2001) <i>Building Contract Procedures in Hong Kong</i> . Longman Hong Kong Education.		
Murdoch & Hughes (1996) <i>Construction Contracts: Law &amp; Management</i> . E & EN Spon, U.K.		
Shum, C. (1998) <i>General Principles of Hong Kong Law</i> , 3 <sup>rd</sup> ed., Longman, Hong Kong.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

Subject Code	BRE391	<b>CONSTRUCTION TECHNOLOGY II</b>
Level	3	
Contact Hours	Lect:21 Lab/Sem/TU:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	BRE291 or BRE294 or equivalent	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	J.L. Hao (BRE) Y.S. Wong (BRE)	<p><b>Subject Aim:</b></p> <p><i>This subject is intended to:</i></p> <p>The overall aim of the subject is to develop understanding of contemporary construction methods and processes associated with substructure, superstructure, cladding and internal elements in medium to large scale construction projects. The subject also aims to provide insight to the current themes that are driving developments in construction technology.</p> <p><b>Objectives are:</b></p> <ol style="list-style-type: none"> <li>1. To identify and understand the range of advance technologies that are available and appropriate for the construction of contemporary buildings.</li> <li>2. To facilitate an understanding of the centrality of technological decision making in the context of the wider construction process.</li> <li>3. To provide the necessary skills to allow the evaluation of a range of technologies towards the adoption of an appropriate design and construction decision.</li> </ol>

**Learning Outcomes:**

*On completion of the subject the students should have acquired the ability to:-*

1. Possess knowledge of processes and methods for the development of construction projects.
2. Use the knowledge and methods for different types of construction.
3. Solve the identified technological problems occurred during construction projects' processes.
4. Apply the code of practice, environmental and safety issues into the construction processes.

**Brief Syllabus Content:**

The overall process of a construction project.

Site production: engineering approach in producing the site layout and site planning.

Sub-structural construction: deep foundations including pile foundations and caissons, basement's construction.

Super-structural construction: reinforcement concrete structures, steel structures, composite building systems.

Complex walls.

System formworks.

Environmental and safety issues in construction process.

IT in construction process.

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

A series of interactive lectures, tutorials and seminars will be delivered through the whole semester. These will be supplemented by guest speakers and laboratory works. Problem-based learning approach is adopted through projects to assess the students' systematic knowledge and integrate the knowledge into real cases.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 70% and 30% of the overall marks respectively.

The assessment will be focused on the students' abilities:

To analyse and interpret the issues through construction process.

To apply the knowledge into a simulated situation;

To solve the key problems in other similar situations.

To improve communication and build up teamwork skills.

**Reading List:**

**Recommended :**

Chew, Y.L.M. (2001) *Construction Technology for Tall Buildings*. 2<sup>nd</sup> edition Singapore: Singapore University Press.

Chudley, R. (1999) *Advance Construction Technology* (Rev. ed.) 3<sup>rd</sup> Edition, Longman .

Foster J.S. & Harington R. Mitchell, (2000) *Structure & Fabric - Part 2*, 6<sup>th</sup> Edition, Mitchell, Longman -Hall.

**Supplementary:**

Allen E. (1999) *Fundamentals of Building Construction: Materials and Methods*. 3<sup>rd</sup> Edition, John Wiley & Sons, New York.

Ambrose, J.E. (1992) *Building Construction and Design*. New York: Van Nostrand Reinhold.

Bland, A. (1994) *International Components*, Mitchell, Longman.

BRE (British Research and Establishment) Digests.

Council on Tall Buildings and Urban Habitat (1995), *Architecture of Tall Buildings*, America: McGraw Hill

Chudley, R. (1999) *Construction Technology* (Re. ed.). 3<sup>rd</sup> Edition. England: Longman.

Davies, V.J. and Tomasin, K. (1996) *Construction Safety Handbook*, 2<sup>nd</sup> Edition. London, Telford.

Illingworth, J.R. (2000) *Construction Methods and Planning*. 2<sup>nd</sup> Edition. London: E&FN Spon.

Mcevoy, M. (1994) *External Components*. Mitchell, Longman.

Nunnally, S.W. (2001) *Construction Methods and Management*. 5<sup>th</sup> Edition.. Prentice

Wong, W.M.R. (1998) *15 Most Outstanding Projects in Hong Kong*. Hong Kong: China Trend Building Press Ltd.

Wong, W.S. (1991) *Building Materials and Technology in Hong Kong*, All Arts Ltd.

Subject Code	BRE3931	<b>TEMPORARY WORK DESIGN</b>
Level	3	
Contact Hours	Lect:21 PW:56	
Student Effort Hours	120	
Assessment Method	Coursework 100%	
Credit Value	4	
Pre-requisites	BRE291, BRE204 or equivalent	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i> <ol style="list-style-type: none"> <li>1. Bring students' attention to the vertical integration of the subject areas learned in Level 2 such as Structure, Construction Technology Engineering Mathematics together with the working experience gained in Industrial Centre to the subject areas of Level 3 Structure II &amp; Construction Technology II through design project whilst the inter-relation of the horizontal integration between subjects are also important in solving a problem-based project work.</li> <li>2. Integrate and apply knowledge gained from individual subject areas in technology, management, economics and legal aspects.</li> </ol>
Subject Leader/ Lecturer/Dept.	H.Q. Fan (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Evaluate the importance of different types of falsework and formwork.</li> <li>2. Design falsework and formwork for building construction.</li> <li>3. Appraise alternative solutions to falsework and formwork design.</li> <li>4. Recognize the inter-relationship and interdependence of various areas in construction.</li> <li>5. Comprehend the operations, technology &amp; structure, management, economics and legal impacts of the construction industry both local and other countries.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<p>The basic concepts of falsework.</p> <p>Formwork classification economies of formwork, formwork finishes and surface treatments, tolerance, proprietary system formwork, types of form types.</p> <p>The choice of materials and systems.</p> <p>Falsework design: procedures, materials and components, forces applied to falsework, analysis of falsework structure, foundations to falsework; design using scaffold tube and fittings, standard solutions and other considerations affecting certain design solutions.</p> <p>Formwork design: permissible stress for solid timber and plywood, loading on formwork, design concepts and procedures for wall forms, column forms, beam sides and slab soffit forms.</p> <p>International study.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Structured tutorials are carried out at different stages during the progress of project to provide learning support to students in achieving the outcoming.

A structured design project based on real life situation is to be used for setting the project and consists of the components. The project will be divided into two parts. The first component deals with the design of the structural elements of building components, while the second components students to prepare design of falsework systems to facilitate the construction of the structural elements. The third component is to evaluate the different systems of formwork and falsework and to appraise alternation solutions. Students are asked to form in groups of five. By providing the students basic drawings and design brief, they are asked to propose a suitable structural form for the project, and to prepare the subsequent design drawings, structural calculations and specifications for the first part of the project. The second part of the project is the further development of the works in part 1, students are asked to produce plan and proposal for the falsework system for facilitating the construction. Formal lectures will be conducted with supplement of tutorials during the lecture sessions.

For **international study**, An important part of the subject is the comparative study of the construction and real estate industry of selected Asia Pacific countries and Hong Kong. A study tour or equivalent is to be organized by students. Students will select a country/region to study the structure of the property and construction industries on a wide range of topic areas of visit to bodies of the countries, which may include, government bodies, research institutions, universities, construction contractors and consultants, property developers, etc. The study tour will be organised by students between semesters. On completion of the tour, students are asked to prepare a report on what they have observed and to carry out a critical comparison between the country visited and Hong Kong. Also, a public presentation will be arranged to let students present their findings in a formal situation. It must be emphasized that input from teaching staff on the study your is kept to a minimal and is provided as guidance in order to allow the student more autonomy to administer the projects and learn through the process of planning and execution. A final report and a public lecture for the International Studies will be presented and assessed by the Project Tutor.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

The assessment of the subject will be by continuous assessment. For the design project, students will produce a report, with drawings, specifications and any other relevant information appropriate for project submissions. They also need to prepare a group presentation on their findings and work done together with the submission if required. At regular intervals, students will be asked to report on the progress of work which will be commented and assessed by the supervisor. The design project should demonstrate the students' ability to design formwork/falsework systems and to appraise their proposed solutions.

For international study, the assessment will be achieved through the initial proposal, the report and the public lecture. It is expected all students will participate in various stages of the project, therefore, each student have to state at which stage they are involved in the project so that contributions by individual student can be observed.

**Reading List:**

No standard text are recommended, since students have to refer to various literature 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:**

Illingworth J.R (1987) *Temporary Works: Their Role in Construction*, London: Thomas Telford

Labour Department (1995) *Code of Practice for Scaffolding Safety*

Chudley, R (1999) *Advanced Construction Technology*, 3<sup>rd</sup> ed. revised by Roger Grano, Longman.

Illingworth, J.R. (2000) *Construction Methods and Planning*, 2<sup>nd</sup> ed., E & FN Spon

Subject Code	BSE332	<b>FIRE SERVICES</b>
Level	3	
Contact Hours	Lect/Sem:28 Tut:9 Lab:9	
Student Effort Hours	120	
Assessment Method	Examination 70% Coursework 30%	
Credit Value	3	
Pre-requisites	BSE222, BSE251 or equivalent	
Co-requisites	Nil	
Exclusions	BSE336	
Subject Leader/ Lecturer/Dept.	(BSE)	
<p><b>Subject Aim:</b></p> <p><i>This subject is intended to:</i></p> <ol style="list-style-type: none"> <li>1. Provide base knowledge sufficient to enable students to design and appraise fire engineering systems, based on a second understanding of the background concepts.</li> </ol>		
<p><b>Learning Outcome:</b></p> <p><i>Students will demonstrate their ability to:-</i></p> <ol style="list-style-type: none"> <li>1. Understand and appraise the background behind legislation and codes of practices related to fire services in building.</li> <li>2. Design and make rational choices of system, materials and equipment based on requirements from local regulations as well as performance from basic fundamentals.</li> <li>3. Be able to develop in depth studies in fire engineering and research by delivering fundamentals in fire science.</li> </ol>		
<p><b>Syllabus Content:</b></p> <p><i>Fundamental Concepts of Fire:</i> Fire triangle, properties of fuel, fire extinguishing mechanisms.</p> <p><i>Legislation:</i> Local regulations, code of practices, building regulations, legislative issues, role of engineers in fire services.</p> <p><i>Fire Control Systems:</i> Theory and principle of water-based systems: standpipe, sprinkler, spray, foam, drencher, water mist. Theory and principle of gas systems: CO<sub>2</sub>, clean agent, environmental effect. Chemical dry powder. Portable fire extinguishers.</p> <p><i>Smoke Control Systems:</i> Fire safety principles in smoke management and in ventilation and air conditioning systems. Pressurisation of staircases and safety zones in hazardous areas, smoke extraction, smoke vents.</p> <p><i>Fire Detection and Alarm Systems:</i> Principles of fire detection and alarm systems, unwanted alarm, interface with other installations and building management.</p> <p><i>Fire Resisting Construction:</i> Properties of material under fire environment, fire resisting period, compartmentation. Means of access and escape.</p>		

**Learning and Teaching Approach:**

The realisation of the aims will be based on lectures, tutorials, assignments, laboratories, directed reading and industrial/site visits. Lectures will be used to introduce various systems and the necessary engineering design knowledge, backed up by films and slides. Tutorials will provide the opportunity for questions and discussions on problems related to lectures, assignments, and case studies. Assignments will emphasise on practical design solutions and performance appreciation. There will be a two-hour test.

Laboratories will develop student ability to understand physical phenomena of fire services and to interpret experimental data with practical design criteria of systems. Laboratory sessions will be jointly organised together with other technical subjects of Stage 2 of the programme. Industrial visits will allow students to appreciate system operation, maintenance and installation.

**Assessment:**

Based on an examination mark 70% and continuous assessment mark 30%.

The continuous assessment mark is made up from one in class tests, one seminar and laboratory reports.

**Reading List:****Recommended:**

*SEPE Handbook of Fire Protection Engineering (2<sup>nd</sup> Ed.)*, NFPA, 1995

*Fire Protection Handbook (18<sup>th</sup> Ed.)*, NFPA, 1997

*Building Regulations*, SAR, Hong Kong Government

*Code of Practice for Minimum Fire Service Installations and Equipment*, FSD, H.K., 1994

*Manual of Firemanship*, HMSO

*Rules for Automatic Sprinklers Installations*, LPC, 1990

*NFPA Standards*, ANSI/NFPA

*Design of Smoke Management Systems*, ASHRAE, 1992

*Code of Practice for the Provision of Means of Access for Firefighting and Rescue*, BD, H.K., 1995

*Code of Practice for the Provision of Means of Escape in Case of Fire*, BD, H.K., 1996

**Related Laboratory Work:**

Investigation of the sensitivity of a fire detection system  
Study of the operating characteristics of a sprinkler/water mist system  
Smoke movement

**Related Design Work:**

Automatic Sprinkler System  
Hose Reel/Fire Hydrant Systems  
Smoke Extraction Systems  
Fire Detection and Alarm Systems



Subject Code	ELC3403	<b>WORKPLACE ENGLISH FOR THE FACULTY OF THE CONSTRUCTION AND LAND USE</b>
Level	3	
Contact Hours	Seminars : 42	
Student Effort Hours	120	
Assessment Method	Coursework 100%	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  This subject aims to develop those English language skills required of FCLU students to communicate effectively in their future professional careers.
Credit Value	3	
Pre-requisites	Nil	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	Robert Yiu (ELC)	
<b>Learning Outcomes:</b>		
<p><i>Students will demonstrate their ability to:-</i></p> <p>At the end of the subject, students should be able to use appropriate language and text structure to:</p> <ul style="list-style-type: none"> <li>▪ interact effectively in an English job interview</li> <li>▪ write business correspondence</li> <li>▪ write short reports</li> <li>▪ participate effectively in workplace discussions</li> </ul> <p>Students will also improve and extend their grammar, vocabulary and pronunciation on this course.</p>		
<b>Brief Syllabus Content:</b>		
<p>This syllabus is indicative. The balance of the components, and the weighting accorded to each, will be based on the specific needs of the students.</p> <ol style="list-style-type: none"> <li>1. <b><i>Spoken communication in the workplace</i></b> Practising the specific oral skills required in workplace contexts, such as telephoning, job interviews and discussions.</li> <li>2. <b><i>Written communication in the workplace</i></b> Selecting and using relevant content, appropriate style and format, and structure and layout in letters, memos and emails.</li> <li>3. <b><i>Language appropriacy</i></b> Using context-sensitive language in both spoken and written English.</li> <li>4. <b><i>Language development</i></b> Improving and extending relevant features of grammar, vocabulary and pronunciation.</li> </ol>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The study method is primarily based on seminars and these will involve interactive learning activities such as discussions and role-plays. Use will be made of audio and video recordings, relevant web-based materials and the ELC's Centre for Independent Language Learning.

Learning and teaching materials developed by the ELC will be used throughout this course. Teachers will recommend additional reference materials as required.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

100% Continuous Assessment

Students' oral and writing skills will be evaluated through assessment tasks related to the learning outcome areas. Students will be assessed on the accuracy as well as the appropriacy of the language used in fulfilling the assessment tasks.

**Reading List:**

**Recommended:**

- Baugh, L. S., Fryar, M. & Thomas, D. A. (1995). *How to write first-class business correspondence*. Lincolnwood, Ill: NTC Publishing Group.
- Bilbow, G. T. (2004). *Business writing for Hong Kong*. 3<sup>rd</sup> ed. Hong Kong: Longman Hong Kong Education.
- Comfort, J. (1996). *Effective telephoning*. Oxford: OUP.
- Deluca, M. J. (2001). *More best answers to the 201 most frequently asked interview questions*. New York, NY: McGraw-Hill.
- Guffey, M. E. (2004). *Essentials of business communication*. 6<sup>th</sup> ed. Mason, OH: South-Western College Pub.
- Houp, K. W. (2002). *Reporting technical information*. 10<sup>th</sup> ed. New York, NY: Oxford University Press.
- Huckin, T. & Olsen, L. (1991). *Technical writing and professional communication for nonnative speakers of English*. 2<sup>nd</sup> ed. New York, NY: McGraw Hill.
- Kennedy, G. E. & Montgomery, T. T. (2002). *Technical and professional writing: Solving problems at work*. Upper Saddle River, NJ: Prentice Hall.
- Lehman, C. M. & DuFrene, D. D. (1999). *Business communication*. 14<sup>th</sup> ed. Mason, OH: Thomson/South-Western.
- O'Driscoll, N. & Pilbeam, A. (1992). *Meetings and discussions*. Harlow, Essex: Longman.
- Taylor, S. (2005). *Communication for business: A practical approach*. 4<sup>th</sup> ed. Harlow: Pearson Longman.

Subject Code	ELC3404	<b>JOB APPLICATION SKILLS (ELC3401 top-up)</b>
Level	3	
Contact Hours	Seminars: 14	
Student Effort Hours	120	
Assessment Method	Coursework 100%	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  This subject is a one-credit subject for students whose programme requires them to study the three-credit ELC3403 Workplace English for the Faculty of Construction and Land Use but have previously gained two credits by completing ELC3401 English in the Workplace for FCLU Students. The subject aims to develop the written and spoken English language skills required for effective communication in the job-seeking process.
Credit Value	1	
Pre-requisites	Nil	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	Robert Yiu (ELC)	

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

At the end of the subject, students should be able to use appropriate language and text structure to:

- write effective job application documents
- interact effectively in job interviews conducted in English

Students will also improve and extend their grammar, vocabulary and pronunciation on this course.

**Brief Syllabus Content:**

**1. Job application documents**

Selecting and using relevant content, appropriate style and format, and structure and layout in résumés and job application letters.

**2. Job interviews**

Practising the specific verbal and non-verbal interactive strategies for effective job interviews, including the skills of asking and answering interview questions.

**3. Language appropriacy**

Using context-sensitive language in both spoken and written English.

**4. Language development**

Improving and extending relevant features of grammar, vocabulary and pronunciation.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The study method is primarily based on seminars and these will involve interactive learning activities such as discussions and role-plays. Use will be made of audio and video recordings, relevant web-based materials and the ELC's Centre for Independent Language Learning. Learning and teaching materials developed by the ELC will be used throughout this course. Teachers will recommend additional reference materials as required.

**Mode of Study**

Primarily seminars            14 hours

As the subject is offered only to those students who have successfully completed ELC3401 in their PolyU Higher Diploma programme, the mode of delivery may vary depending on the number of students who are required to study this one-credit, top-up subject. The content areas will be covered in seminars and/or tutorials, and will involve completion of independent learning tasks.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

100% Continuous Assessment

Students' oral and/or writing skills will be evaluated through an assessment task related to the learning outcomes. Students will be assessed on the accuracy as well as the appropriacy of the language used in fulfilling the assessment task.

**Reading List:**

**Recommended:**

Baugh, L. S., Fryar, M. & Thomas, D. A. (1995). *How to write first-class business correspondence*. Lincolnwood, Ill: NTC Publishing Group.

Bilbow, G. T. (2004). *Business writing for Hong Kong*. 3<sup>rd</sup> ed. Hong Kong: Longman Hong Kong Education.

Deluca, M. J. (2001). *More best answers to the 201 most frequently asked interview questions*. New York, NY: McGraw-Hill.

Lehman, C. M. & DuFrene, D. D. (1999). *Business communication*. 14<sup>th</sup> ed. Mason, OH: Thomson/South-Western.

Taylor, S. (2005). *Communication for business: A practical approach*. 4<sup>th</sup> ed. Harlow: Pearson Longman.

Subject Code	BRE401	<b>CONSTRUCTION TECHNOLOGY III</b>
Level	4	
Contact Hours	Lect:21 Tut/Sem:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	BRE391	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Examine building production during construction. The component parts of the building fabric, whatever the form of construction, must be designed, fabricated and then assembled or erected on the site to produce the completed building. The processes must be properly chosen, planned and organized in order to achieve the optimum time, cost and quality requirements of the development project with minimum disturbances.
Subject Leader/ Lecturer/Dept.	W.K. Kong (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
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.		
<b>Brief Syllabus Content:</b>		
The integration of architectural, structural and building services in construction production.		
<i>Site production:</i> methods of demolition and safety, building production systems, engineering approach in site/production planning, scheduling and control techniques, relevant resources e.g. mechanical plant;. The issues of environmental protection during 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, site installation. Site fabrication.		
Robotic construction.		
Construction safety; Quality assurance.		
Maintenance.		
Sustainability.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

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. The tutorials are carried out in a systematic guidance in group discussion 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 will 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.

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.

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.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

In both written examination and coursework assignment, 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.

The coursework mark will be based on the laboratory activities assignments, seminar presentations and discussions and site visit reports In both coursework and examination, students should demonstrate their application and appraisal of concepts and knowledge.

Examination and coursework will constitute the 70% and 30% of the overall marks of the subject respectively.

**Reading List:**

Chew, Y.L.M. (2001) *Construction Technology for Tall Building*. 2<sup>nd</sup> edition. Singapore: Singapore University Press

Illingworth, J.R. (2000) *Construction Methods and Planning*. 2<sup>nd</sup> edition. London, New York : E & FN Spon

Nunnally, S.W. (2004) *Construction Method and Management*, 6<sup>th</sup> edition, Upper Saddle River: Prentice Hall

Hamer, M. (1999) *Construction: A 2020 Vision Report*, London: Construction Industry Board

Council on Tall Buildings and Urban Habitat, (1995) *Architecture of Tall Buildings*, McGraw-Hill

Harris F. & McCaffer R. (2001) *Modern Construction Management*, 4th Edition, Blackwell Science

So, A.T.P. & Chan, W.L. (1999) *Intelligent Building Systems*, Kluwer Academic.

Naylor H. (1995) *Construction Project Management: Planning and Scheduling*, Delmar

Neale R., Price A. & Sher W. (1993) *Prefabricated Modules in Construction*, CIOB

**Supplementary:**

Allen E. (1999) *Fundamentals of Building Construction: Materials and Methods*, 3<sup>rd</sup> 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

Subject Code	BRE415	<b>DISPUTE RESOLUTION</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 100%	<b>Subject Aim</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE206	Provide an understanding of the aspects of law and procedures relating to the resolution of dispute in the construction industry and develop students' ability to appropriately apply theoretical aspects of dispute resolution to practical situations.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	S.D. Mau (BRE)	
<b>Learning Outcomes</b>		
<i>Students will demonstrate their ability to:</i>		
<ol style="list-style-type: none"> <li>1. Explain the evolution of dispute resolution in an international context.</li> <li>2. Identify the relevant laws, regulations and procedures and apply them to the resolution of disputes in Hong Kong's construction industry;</li> <li>3. Analyse the process of arbitration, mediation and adjudication;</li> <li>4. Evaluate the implications involved, in terms of contractual and business relations, when making decisions about the choice of method to be used to settle construction related disputes;</li> <li>5. Propose solutions to complex construction dispute cases both orally and in writing.</li> <li>6. Communicate effectively.</li> </ol>		
<b>Brief Syllabus Content</b>		
Litigation as a means of settling disputes.		
Origins of arbitration and of alternative dispute resolution (ADR).		
Different forms of ADR (conciliation, mediation, adjudication, expert appraisal, executive tribunal).		
Dispute resolution processes in Hong Kong (arbitration, mediation and adjudication).		
Application of laws relating to litigation, arbitration and ADR.		
Law of civil evidence: classification of evidence; function of judge and jury; burden and standard of proof; facts that need not be proved by evidence; testimony; hearsay and opinion; admissibility of evidence. Expert witness.		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> )		
With an emphasis on the practice and procedures of arbitration and ADR, students will be required to undertake case study-based assignments, produce seminar presentations, lead debates during tutorial sessions, and conduct role-play exercises.		
<b>Assessment strategy</b> ( <i>assessment of student performance resulting from learning tasks</i> )		
Formative assessments of students' performance will be conducted on a continual basis by providing feedback on the learning activities. For the purpose of summative assessment, 50% of the coursework marks will be assigned to one oral presentation and one written report relating to the theoretical aspects of dispute resolution. The remaining 50% of the coursework marks will be assigned to one oral presentation and one written report relating to the law of evidence.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

### **Reading List**

Goldberg, S. B. (1999), *Dispute Resolution: Negotiation, Mediation and other Processes*. Aspen Law & Business

Hills, M.J. (2001), *Building Contract Procedures in Hong Kong*. Longman Hong Kong Education

Kaplan, N. (1994), *Hong Kong & China Arbitration: Cases and Materials*, Butterworths Asia.

Morgan, R. (1997). *The Arbitration Ordinance of Hong Kong: A Commentary with 1997 Supplement*. Butterworths Asia.

Tapper, R. (1990). *Cross on Evidence*, Butterworths

Uff, J. (1996), *Construction Law & Practice Relating to the Construction Industry*, Sweet & Maxwell.

### **Supplementary:**

Chan, E. H. (1997). Amicable Dispute Resolution in the PRC and its Implication for Foreign-related Construction Disputes. *Construction Economics and Management*, Nov. 1997, Vol.15, No. 6, pp.539-548.

Fenn, P.; O'Shea, M. & Davies, E. (eds.)(1998). *Dispute Resolution and Conflict Management in Construction: An International Review*. E. & FN Spon.

Hills, M.J. (1992), *A Case for an Alternative Approach to the Resolution of Disputes Under JCT 80 Standard Form of Building Contract*, MSc dissertation (Supervisor: Dr. R.F. Fellows), University of Bath

Kaplan, N. (1983), *Hong Kong Arbitration Cases and Materials*, Butterworths Asia

Langan, P. St. J. (1983), *Civil Procedures*, Sweet & Maxwell

Merkin, R. (1996), *Arbitration Act 1996: An Annotated Guide*, Lloyds of London Press

Relevant Ordinances and Regulations of the Hong Kong Government



Subject Code	BRE416	<b>COMPUTERIZATION OF CONSTRUCTION PRODUCTION AND MANAGEMENT</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	Nil	1. Develop an understanding of the practical application of computer systems and packages in construction production and management.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	H. Li (BRE) K.D. Wong (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Understand and demonstrate knowledge of the construction process and the role that information technology can play to support this process.</li> <li>2. Understand and demonstrate knowledge of the application of computer systems at the construction production stage.</li> <li>3. Be able to appraise commercially available and tailor-made computer packages in construction production and management.</li> </ol>		
<b>Brief Syllabus Content:</b>		
The construction process within the overall project process.		
Basic concepts of Management Information Systems.		
Identifying the benefits of computer based systems.		
Enterprise Resource Planning.		
Computerized construction management using web based project management systems for project planning, information control, material control, progress control and quality assurance.		
An introduction to virtual prototyping technology and product life cycle simulation.		
<b>Learning and Teaching Approach:</b>		
Lectures and workshops will be run throughout the semester period. A lecture schedule outlining the topics to be covered will be distributed to students in the first lecture of the semester. In the workshop periods, students will be required to assess and use the systems and to prepare group assignments.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will each constitute 50% of the overall assignment for the subject. The coursework mark will be based on the assignments, presentation and discussions. Two assignments with equal contribution will be set.

The examination will be based on a 2 hours examination based on materials covered in the lecture periods and background readings. Coursework by assignment and group projects will be set to assess the students' abilities and skills required in this subject.

**Reading List:**

**Recommended:**

Betts M (1999) Strategic Management of IT in Construction, Blackwell Science. ISBN 0632040262

Flowers R (1966) Computing for Site Managers – Database Techniques, Blackwell Science. ISBN 06320398

Winch G (2002) Managing Construction Projects – An Information Processing Approach, Blackwell Science ISBN 0632058889

**Supplementary:**

Best R, Valence G, Langston C. & Smith P. (1996) *Information Technology and Quantity Surveying*. The Building Economist.

*The International Journal of Construction Information Technology*, The University of Salford.

**Recommended Web Sites:**

Electronic Journal of Information Technology in Construction: <http://www.itcon.org>

The 20<sup>th</sup> CIB W78 Conference on Information Technology in Construction:  
<https://www.cs.auckland.ac.nz/w78/>

Subject Code	BRE418	<b>REAL ESTATE DEVELOPMENT</b>
Level	4	
Contact Hours	LT:21/TU:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	Nil	1. Provide an integrated and consolidated intellectual framework for students to comprehend and analyze the current factors and key issues in affecting production and consumption of the built environment in society.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	B.S. Tang (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Describe and evaluate the existing research literature on land and property development.</li> <li>2. Describe and evaluate the complex and dynamic process of real estate development, with special reference to the local context.</li> <li>3. Distinguish and explain the significance of all the key social, political, economic, physical and regulatory factors affecting the performance of the property development industry.</li> <li>4. Appraise the theoretical models and concepts in analyzing the current issues in property development.</li> <li>5. Synthesize knowledge from various disciplines and apply them in solving practical problems in real estate development.</li> <li>6. Communicate and present ideas in a clear and articulate manner using appropriate academic conventions.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<i>Real Estate Development Process:</i>		
Models of Development Process; Strengths and Weaknesses of Development Models; Factors Influencing Real Estate Development; Transformation of Urban Built Environment.		
<i>Public Sector Regulations and Development Potential:</i>		
Concepts of Project Feasibility; Approaches in Development Control Decision Analysis; Political vs Technical Factors in Government Regulations; Judging Government Decisions.		
<i>Current Issues in Real Estate Development:</i>		
Property Finance and Property Cycles; Globalization of Real Estate; Land Development in China; Property-led Urban Regeneration.		
<i>Different Types of Real Estate Development:</i>		
Office, Residential and Industrial Development.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Mass lectures - The lectures provide an explanation and evaluation of the important theories, models and concepts in the course contents. Visiting speakers from the industry may be invited to give guest lectures on specific topics.

Interactive Tutorial Sessions - Tutorials are organized for students to intensively evaluate the relevance of the research literature and/or work on particular problems in real estate development. Students are required to present and communicate their ideas and/or discuss their recommendations for the cases at the tutorials. Some tutorials may be conducted on-line, if appropriate.

Coursework may comprise short quizzes, tutorial assignments, case studies and short essays.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Assessment consists of both coursework and final examination.

The tutorial assignments/case studies may provide specific problems/issues associated with particular real estate development topics. Students have to look beyond the limited information provided in the topics and conduct their own research in solving the problems. This activity is intended to assess Learning Outcomes (2), (3) and (5).

The short quizzes/short essays ask students to apply the theories, and evaluate the concepts and ideas they have learnt in this course. Questions are set to enable the students to determine the validity of the theories and give their own conclusions. Coursework assignments are graded primarily on the basis of their contents. Assessment criteria are provided to the students. This activity is to assess Learning Outcomes (1), (4) – (6).

Final examination comprises essay type questions and is intended to assess Learning outcomes (2) – (6).

**Selected Reading List:**

Gore, T., and Nicholson, D., (1991) Models Of The Land-Development Process: A Critical Review, *Environment And Planning A*, **23**, 705-730.

Willis, K.G. (1995), Judging Development Control Decisions, *Urban Studies*, **32**, 7, 1065-1079.

Mueller, Glenn R. (1995), Understanding Real Estate's Physical And Financial Market Cycles, *The Real Estate Finance Journal*, **12**, 3, 47-52.

Haila, Anne, (1991), Four Types Of Investment In Land And Property, *International Journal Of Urban And Regional Research*, **15**, 3, 343-365.

Dowall, David E. (1993), Establishing Urban Land Markets In The People's Republic of China, *Journal Of American Planning Association*, **59**, 2, Spring 1993, 182-192.

Tang, B.-s., & Tang, R. M. H. (1999). Development control, planning incentive and urban redevelopment: evaluation of a two-tier plot ratio system in Hong Kong. *Land Use Policy*, **16**(1), 33-43.

Tang, B.-s., & Leung, H.-f. (1998). Planning enforcement in Hong Kong: Implementing new planning law before the change of sovereignty. *Town Planning Review*, **69**(2), 153-169.

Tang, B.-s., & Tang, R. M.-h. (1999). Industrial property, market initiative and planning policy: restructuring obsolete industrial properties in Hong Kong. *Property Management*, **17**(2), 157-168.

Subject Code	BRE426	<b>GEOTECHNICAL AND FOUNDATION ENGINEERING</b>
Level	4	
Contact Hours	Lect:21 Sem:10 Lab:11	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	CSE290 & BRE302	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Provide students with knowledge of the basic principles of geotechnical engineering and the relation and implications to foundation choices and designs and the ground works needed to be carried out.
Subject Leader/ Lecturer/Dept.	C.H. Yam (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Apply the understanding of soil properties, mechanics principles and theories to the behaviour of soils under different kinds of pressures and the effects of water.</li> <li>2. Relate the importance of safety and geotechnical considerations in designing/undertaking site formation and earth-retaining works.</li> <li>3. Describe the basics concepts of soil mechanics and its application to analyze soil retaining structures.</li> <li>4. Illustrate an understanding of modern soil improvement techniques and retaining slopes, soil and excavation techniques.</li> <li>5. Appraise foundation design concepts in the choice of appropriate foundation and design simple foundations.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<i>Soil Mechanics and Geology:</i>		
Shear strength of soil, lateral earth pressure.		
Site investigation for deep and complex foundation/basement design and construction, interpretation of borehole log (field and laboratory tests).		
<i>Site Formation:</i>		
Techniques of excavation and de-watering.		
<i>Stability of Slopes and Earth Retaining Structure:</i>		
Slope stability, drainage of slopes, ground anchor, slope protection methods. Active and passive lateral earth pressures, analysis and design of soil retaining structures in particular gravity retaining walls, cantilever and anchored sheet pile walls, diaphragm walls, braced or strutted excavation, failure of retaining structure		
<i>Foundation Design and Geotechnical Problems :</i>		
Ground & soil stabilisation improvement: compaction and pre-compaction, grouting and chemical stabilisation, vibratory methods, soil reinforcement and the use of geosynthetics for drainage.		
Stresses in subsoil, load bearing capacity and settlement of foundations, rate/magnitude of settlement; factors to be considered in foundation design; pile foundation method and construction process of percussion and bored piles, pile capacity and pile driving formula, plant and equipment for piling, pile testing and Code of Practice.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (tasks and activities designed to achieve learning outcomes):

Interactive Lectures will enable students to:

1. appreciate basic concepts of soils mechanics;
2. relate geotechnical considerations regarding construction works.
3. apply the soil mechanics concept to analyse slope stability, retaining wall structure and design simple foundations.

Tutorial will enable student to:

1. consolidate the geotechnical and foundation engineering concepts through problem-solving assignments and discussions.

Laboratory will enable students to:

1. identify and appreciate the shear strength and permeability of soils.

**Assessment strategy** (assessment of student performance resulting from learning tasks):

Assessment comprises of four parts:

1. Problem-solving assignment )
2. Laboratory report ) Coursework
3. Mid-term test )
4. Final examination

to assess students' ability to

- a. appreciate the basic knowledge in geotechnical engineering and
- b. apply the soil mechanics concept to analyse slope stability, retaining wall structure and design simple foundations.

Coursework: 30%

Final Exam.: 70%

**Reading List:**

**Recommended:**

Liu, C. and Evett, J.B. (2001) *Soils and Foundations*, 5<sup>th</sup> Edition, Prentice Hall

**Supplementary:**

Tomlinson M.J. (1995) *Foundation design and construction*, Longman Scientific & Technical

Tomlinson M.J. (1994) *Pile design and construction practice*, E & FN Spon

Currie B., Sharp R.A. (1990) *Structural Design*, Stanley Thornes

Smith M.J. (1986) *Concise Soil Mechanics*, 4<sup>th</sup> Edition, McDonald and Evons

Geotechnical Manual for Slopes, 2<sup>nd</sup> Edition (1984), 300 p. (English Version), (Reprinted, 2000) GEO, Civil Engineering Department, HKSAR

Guide to Retaining Wall Design, 2<sup>nd</sup> Edition (1993), 258 p. (Reprinted, 2000) Geoguide 1 GEO, Civil Engineering Department, HKSAR

Guide to Site Investigation (1987), 359 p. (Reprinted, 1996) Geoguide 2 GEO, Civil Engineering Department, HKSAR

Guide to Rock and Soil Descriptions (1988), 1986 p. (Reprinted, 1997) Geoguide 3 GEO, Civil Engineering Department, HKSAR

Guide to Slope Maintenance, 2<sup>nd</sup> Edition (1998), 91 (English Version), (Reprinted, 1999) Geoguide 5 GEO, Civil Engineering Department, HKSAR

Pile Design and Construction (1996), 384 p. (Reprinted, 1997), GEO Publication No. 1/96 GEO, Civil Engineering Department, HKSAR

Cuduto, D.P. (1999) *Geotechnical Engineering Principles and Practices*. Prentice Hall

Cuduto, D.P. (2001) *Foundation Engineering Principles and Practices*, Prentice Hall

Subject Code	BRE427	<b>APPLIED PROPERTY INVESTMENT</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 30% Examination 70%	
Credit Value	3	
Pre-requisites	BRE315 and BRE319	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	K.F. Man (BRE) H.H. How (BRE)	<p><b>Subject Aim:</b></p> <p><i>This subject is intended to:</i></p> <ol style="list-style-type: none"> <li>1. Give to the students an appreciation of the scope of real property investment.</li> <li>2. Enable them to apply the techniques available to select suitable investment vehicles for different types of investor under different market conditions.</li> <li>3. Enable the students to apply the techniques in business valuation to solve practical problems.</li> </ol>
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Identify and analyse of the investment environment for real estate in Hong Kong, PRC and Overseas.</li> <li>2. Recognise the scope of real estate investment in Hong Kong.</li> <li>3. Use their knowledge to solve practical problems in real estate investment business and business valuation.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<p>Rationale of property investment: major investors in real property in the public and private sectors; principal types of real property investment and their characteristics; causes for historical property market cycles, present market trends and projections; direct and indirect investment; securitization such as REIT (real estate investment trust) in the property market; property investment in the People's Republic of China and overseas.</p> <p>The investment decision: sources and manipulation of information; analysis of direct real property investments; comparative investment analysis; returns on investment; risk and uncertainty. Investment psychology.</p> <p>Analysis of indirect property investment (business valuation): Open market and notional market; Approaches to value determination: Going Concern approach and Liquidation Value approach; Valuation techniques: asset-based techniques, Income approach and market approach; Market capitalization and discount rates; Goodwill valuation.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Emphasis is made on the application of the investment principles and techniques developed over the past two years to solve actual problems in property investment. Students' awareness on the investment market, particularly the real estate investment market, will be enhanced. It will be learnt through case studies, problem-solving exercises, presentation etc. Discussion will be facilitated in small tutorial groups. Lectures, seminars, projects and tutorials will form the basic skeleton for learning the subject.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively. The coursework mark will be based on the assignments and presentations. Both examination and coursework assess learning outcomes 1 to 3.

**Reading List:**

**Recommended:**

Andrew Baum (1995), Property Investment Appraisal, 2<sup>nd</sup> edition

Brown R. Gerald (2000), Real Estate Investment: a capital market approach

Reilly F. and Brown K. (2000), Investment Analysis and Portfolio Management, 6<sup>th</sup> edition

Hersh Sefrin (2000), Beyond Greed and Fear: understanding behavioural finance and the psychology of investing

Nofsinger John R. (2002), The Psychology of Investing 1<sup>st</sup> edition

Stowe, Robinson, Pinto and McLeavey (2002), Analysis of Equity Investments: Valuation AIMR

Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard (2000) Business Analysis and Valuation using Financial Statements, 2<sup>nd</sup> edition, South-Western College Publishing

James R. English (2001), Applied Equity Analysis: Stock Valuation Techniques for Wall Street Professionals, McGraw-Hill, New York

**Supplementary:**

Graham and Dodd (1962), Security Analysis: principles and technique, 4<sup>th</sup> edition

Graham (1973), The Intelligent Investor: a book of practical counsel

Michael E. Porter (1998), Competitive Strategy: The Core Concepts, Free Press, New York

Howard Schilit (2002), Financial Shenanigans, 2<sup>nd</sup> edition, McGraw-Hill, New York

Robert J. Shiller (2000), Irrational Exuberance, Broadway Books, New York



Subject Code	BRE435	<b>DESIGN, ADAPTATION AND CONVERSION</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	
Credit Value	3	
Pre-requisites	BRE391	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Equip students with the skills necessary to undertake the conversion to existing buildings.
Subject Leader/ Lecturer/Dept.	K.K. Lo (BRE)	

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Identify problems and constraints in the course of design for conversion and adaptation work.
2. Apply the knowledge and techniques to extend the useful life and economic return of Hong Kong buildings by means of conversion and adaptation.
3. Understand the concepts of economic and physical obsolescence for buildings for evaluation of their impacts on process of conversion work..
4. Comply with the local statutory requirements in the course of adaptation and conversion to existing buildings.
5. Use the project management and contract administration techniques for conversion and adaptation practice.

**Brief Syllabus Content:**

The design and structural considerations and implications that affect the conversion, improvement and adaptation work on existing buildings in relation to users requirements.

The physical and economical considerations that determine the viability and feasibility of conversion or adaptation of existing buildings.

Relevant legislation controlling the conversion and adaptation work of existing buildings including those of architectural and historical nature.

The special considerations of planning the project management and contract administration for conversion and adaptation work.

Special considerations for the conversion and adaptation work of buildings of architectural and historical interest.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The subject involves both theoretical and practical approaches in local context relating to project work and tutorial assignments, such as lectures, seminars, case studies, site visits, criticism of presentations and projects by peer groups and practicing professionals and etc. Some of them will be delivered by prominent professional practitioners.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

The focus of assessment is on the practical skills associated with solving the problems of adapting buildings by integrating the key learning outcomes and will therefore use case studies. The subject will be assessed by 2 pieces of coursework including project work and tutorial assignments. One will be on project basis (70% of coursework) and the other will be on written assignment (30% of coursework).

**Reading List:**

**Recommended :**

Hong Kong Government, *Building (Planning) Regulations, latest Edition*, Government Printer

Catt, R. & Catt, S. (1981) *Conversion, Improvement and Extension of Buildings*, London: Estate Gazette

Markus, Thomas A, (1979), *Building Conversion and Rehabilitation: Designing for Change in Building Use*, London: Butterworths

**Supplementary:**

Highfield, David (1987), *Rehabilitation and Re-use of Old Buildings*, Spon

Cantacuzino, Sherban, (1975), *New Uses for Old Buildings*, Architectural Press

Subject Code	BRE436	<b>APPLIED PROPERTY VALUATION</b>
Level	4	
Contact Hours	LT/SM : 42	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE315	1. Apply complex valuation problems.
Co-requisites	Nil	2. Evaluate practical valuation problems taking into account of the effects of legislation.
Exclusions	Nil	3. Analyse valuation standards of selected overseas countries.
Subject Leader/ Lecturer/Dept.	C.H. Lau (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Explore the effects of land administrative measures and land tenure on property value.</li> <li>2. Apply current legislative measures which affect property value and valuation approaches in resumption, modification and taxation cases.</li> <li>3. Apply the techniques of valuation to appraise, analyze and solve complex valuation problems in both private and public sectors.</li> <li>4. Explore the sources of international valuation standards and their importance.</li> <li>5. Possess a knowledge of contemporary issues.</li> </ol>		
<b>Brief Syllabus Content:</b>		
Land administrative measures and land tenure in Hong Kong.		
Legislation affecting development; Building Ordinance and Building (Planning) Regulations; Town Planning Ordinance; Hong Kong Airport (Control of Obstruction) Ordinance: Density Zones.		
Valuation of development land.		
Valuation for lease modification; common government lease conditions; procedures and valuation approaches.		
Valuation for surrender and regrant of leases: exchange; procedures and valuation approaches.		
Valuation for resumption purposes: relevant legislation; principles of compensation; basis of valuation.		
Landlord and Tenant (Consolidation) Ordinance: relevant legislation; principles of compensation; basis of valuation.		
Valuation for taxation purposes: Stamp Duty; Estate Duty, property tax and rating.		
Valuation of specialised properties.		
Asset Valuation: purposes; guidance notes issued by professional bodies; relevant regulations and legislation; valuation approaches; contents of report.		
Valuation practices of selected overseas countries and international valuation standards.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

This subject is aimed at developing the students' ability to appraise and solve complex, including statutory valuation problems. Lectures will be used to highlight the various valuation approaches and the current statutory provisions affecting development and value of property. Case studies will be employed as illustrations, wherever possible. Tutorials will be used by the lecturer and students to discuss valuation problems and assignments while seminars provide suitable forums for presentation by the students. Senior professionals will be invited from practice to give talks on specific valuation topics and share their experience with the students.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Students will be assessed through both coursework and examination.

Coursework will consist of 1 term paper and 2 problem solving assignments in the form of quiz.

Both examination and coursework assess learning outcome 1 to 4.

**Reading List:**

**Recommended:**

Cruden, G.N., (1999) *Land Compensation and Valuation Law in Hong Kong*, Butterworths

HKIS, (1999) *Hong Kong Guidance Notes on the Valuation of Assets*

Baum, A., & Sams, G., (1997) *Statutory Valuations*, Routledge

Butler, D. & Richmond, D., (1990) *Advanced Valuation*, MacMillan

Poon, N.T., & Chan, H.W., (1998) *Real Estate Development in Hong Kong*, PACE

**Supplementary:**

**Nissim, R., (1998) *Land Administration & Practice in Hong Kong*, HKU Press**

Rees, W.H. (ed), (1992) *Valuation: Principles into Practice*, Estates Gazette

Hong Kong SAR Government:

- Building Ordinance (Cap 123)
- Land (Miscellaneous Provisions) Ordinance (Cap 28)
- Land Resumption Ordinance (Cap 124)
- Government Leases Ordinance (Cap 40)
- Government Rights (Re-entry and Vesting Remedies) Ordinance (Cap 126)
- Estate Duty Ordinance (Cap 111)
- Hong Kong Airport (Control of Obstruction) Ordinance (Cap 301)
- Landlord and Tenant (Consolidation) Ordinance (Cap 7)
- Lands Tribunal Ordinance (Cap 17)
- Mass Transit Railway (Land Resumption and Related Provisions) Ordinance (Cap 276)
- Rating Ordinance (Cap 116)
- Stamp Duty Ordinance (Cap 117)
- Roads (Works, Use and Compensation) Ordinance (Cap 370)
- Railways Ordinance (Cap 519)
- Land (Compulsory Sale For Redevelopment) Ordinance (Cap 545)

Subject Code	BRE437	<b>FACILITY MANAGEMENT</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	Nil	Introducing the concept of facilities management and its application in various organizations. The development of facility management, the challenges and opportunities for facility manager will be examined. Contemporary issues in benchmarking, facility audit, building performance assessment, corporate real estate portfolio management and finance will also be discussed.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	H.H. How (BRE) H.Q. Fan (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Articulate management concepts within a variety of facility contexts.</li> <li>2. Assess the performance of a real estate facility across a wide range of performance criteria.</li> <li>3. Assess the performance of a real estate investment portfolio.</li> <li>4. Analyse the role of a facility manager, and apply key competences of a manager on problem solving and decision making.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<p>Basic concepts of facility management – an integrated approach  The changing workplace – space utilization and intelligent buildings requirements  Growth of facility management in Hong Kong – portfolios and institutions  Benchmarking – key performance indicators  Facility audit and building performance assessment – criteria of assessment, HK-BEAM, IBI, etc.  Outsourcing – cost and benefit analysis, basic concepts of outsourcing  Corporate real estate portfolio management – evaluation of real estate performance, decision of acquisition to dis-investment, asset management, real options approach.  Portfolio selection – Applications of portfolio theory and capital asset pricing model in selecting property portfolio</p>		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):		
<p>The programme will consist of formal lectures to introduce the concept and theory of facility management. External speakers will be invited, where possible, to present case studies to illustrate the principles introduced. Students will also be encouraged to participate in project-based tasks to apply concepts and tools introduced.</p>		
<b>Assessment strategy</b> ( <i>assessment of student performance resulting from learning tasks</i> ):		
<p>Assessment will be based on coursework [50%] and examination [50%].</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Reading List:****Recommended:**

- Alexander, K. (1996). Facilities Management: A Strategic Framework, in Alexander, K. (ed). *Facilities Management: Theory and Practice*, E&FN Spon, UK, 2-13
- Becker, F. and Sims, W. (1990). Assessing Building Performance, in Becker, F.D. (ed). *The Total Workplace: Facilities Management and the Elastic Organization*, Van Nostrand Reinhold, NY, 261-270
- Duffy, F. (1992). *The Changing Workplace*, Phaidon
- Finch, E. (1996). A Sea-change in Facilities Management, in Alexander, K. (ed). *Facilities Management: Theory and Practice*, E&FN Spon, UK.
- Hamer, J. (1988). *Facility Management Systems*, Van Nostrand Reinhold
- HK-BEAM (1996a), *An Environmental Assessment for New Air-conditioned Office Premises*, Version 1/96, Centre of Environmental Technology, Hong Kong.
- HK-BEAM (1996b), *An Environmental Assessment for New Air-conditioned Office Premises*, Version 2/96, Centre of Environmental Technology, Hong Kong.
- HK-BEAM (1999), *An Environmental Assessment for New Residential Buildings*, Version 3/99, Centre of Environmental Technology, Hong Kong.
- IFMA (1997), Benchmark III, International Facility Management Association, Houston, Tex.
- IFMA, (1984). *IFMA Research Report #1*, IFMA, Houston
- IFMA, (1987). *Facilities Benchmarks*, IFMA, Houston
- IFMA, (1999). Outlook on Outsourcing, IFMA, Houston

**Supplementary:**

- Chau, K.W., Leung, A.Y.T., Yiu, C.Y. and Wong, S.K. (2003). "Estimating the value enhancement effects of refurbishment" (2003), *Facilities*, **21**(1/2), p.13-19.
- Li, L.H. and Siu, A. (2001) "Privatising management services in subsidized housing in Hong Kong", *Property Management*, **19**(1), 37-49.
- Preiser, W.F.E., Rabinowitz, Z. and White, E. (1988). *Post-occupancy Evaluation*, Van Nostrand Reinhold, NY
- So, A.T.P. and Wong, K.C. (2002), "On the quantitative assessment of intelligent buildings", *Facilities*, **20**(5/6), 208-16.
- Spedding, A. and Holmes, R. (1994). Facilities Management, in Spedding, A. (ed), *CIOB Handbook of Facilities Management*, Longman, 1-8
- Teicholz, E. ed. (2000). *Facility Design and Management Handbook*, McGraw-Hill, NY
- Vijverberg, G., (2002), Accommodation Functionality Assessment in Office Buildings, *Facilities*, **20**(3/4), 94-103.
- Worthing, D. (1994). Strategic Property Management, in Spedding, A. (ed), *CIOB Handbook of Facilities Management*, Longman, 9-24

**Journals for references:**

*Facilities*  
*Facility Management Journal*  
*IFMA News*  
*Property Management*

Subject Code	BRE439	<b>ENGINEERING CONTRACT PROCEDURE</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	
Credit Value	3	
Pre-requisites	BRE349 or equivalent	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Develop an understanding of the technological, practical, procedural, contractual and economic characteristics of engineering work including building services in building projects and civil engineering work.
Subject Leader/ Lecturer/Dept.	K.D. Wong (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Possess the knowledge of the technological practices of engineering work.</li> <li>2. Understand the practices of procurement and contractual arrangements of engineering work.</li> <li>3. Produce and evaluate the measurement and documentation of engineering work.</li> <li>4. Appraise and apply the principle and practices of contractual procedures and administration in engineering work.</li> <li>5. Communicate effectively with contractual negotiation skills.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<ol style="list-style-type: none"> <li>1. Technological aspects of building services work and civil engineering work.</li> <li>2. Cost appraisal and cost planning for building services and civil engineering projects.</li> <li>3. Procurement systems and contractual arrangements for building services and civil engineering projects.</li> <li>4. Documentation, measurement and valuation of building services and civil engineering work.</li> <li>5. Contract administration and procedure in building services and civil engineering projects.</li> </ol>		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):		
<p>Contract documentation and administration will form the main thrust of the course, to be underpinned on a comprehensive engineering work technologies and practices. Interactive lectures on the various technologies, practice and economic aspects will be conducted with a view of providing the background knowledge necessary for developing competence in documentation, procurement and administration in the field of engineering work. Interactive lecture and case studies will be utilized. Professional practitioners will be invited to facilitate problem based learning on different contract strategies in different projects. Tutorial sections will be provided to conduct systematic in discussions.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will constitute the 50% and 50% of the overall mark for the subject respectively. The coursework mark will be based on the assignments by producing documentation, seminar presentations and discussions. At least two assignments with equal contribution will be set.

The assessment by examination will be based on a 2 hour examination. The coursework will be evaluated on; (i) a basic understanding of engineering work practices, economics of engineering work development, and its impact on the economy; (ii) a working knowledge of the contract documentation and administration of typical engineering work; (iii) a critical appraisal of alternative contract strategies, procedures and administration in engineering work.

**Reading List:**

**Recommended:**

Ashworth, A (1994) *Cost Studies of Buildings*, Harlow: Longman Scientific & Technical.

Fussell (1971) *The measurement for engineering services*, London: Spon.

*Hong Kong Standard Method of Measurement for Building Services.*

Mayo-Chandler, Bryan (1980) *Estimating for the Engineering Services*, London: The Electrical Contractors Association.

Seeley, Ivor H (1984) *Building Economics: Appraisal & Control of Building Design*, London: Macmillan.

Shun On Group (1983) *Shun On Quarterly 1983: Building Services in Hong Kong*, Shun On Group.

Atkinson, A.V., (1985) *Engineering Contract Administration*, Hutchinson

Barnes, M., (Editor)(1990), *Financial Control*, Thomas Telford

Cooper, D.F., (1987) *Risk Analysis for Large Projects*, Wiley

**Supplementary:**

Grounds, J. (1991) Effective Engineering Services Cost Management. *The Building Economist* **23**(June),20-21.

Kinlay & Bayley (1985) Quantity surveyors in engineering projects. *The Building Economist* **24** (2), 2-3.

Mills, Anthony (1991) The value of cost planning and bills of quantities. *The Building Economist* **24**(1),14-17.

Ott, A.J. (1989) Quantity surveyors in specialist services. *The Building Economist* **28** (1), 18-19.

Redding, J. (1987) Building services and the challenge of bills of Quantities.*The Building Economist* **25**(4)9-10.

Balke, L., (1989) *Civil Engineer's Reference Book*, Butterworths

Bunni, N.G., (1991) *The FIDIC Form of Contract, the fourth edition of the red book*, BSP Professional.

Government of Hong Kong, (1988) *SMM for Civil Engineering Works*, Hong Kong Government Printer

Government of Hong Kong, (1988) *Sub-contract Articles of Agreement and Conditions for Civil Engineering Works*, Hong Kong Government Printer

ICE *Civil Engineering Standard Method of Measurement 3* Third Edition, Thomas Telford, London 1991

ICE *Civil Engineering Standard Method of Measurement 3* Examples

Wong and Tse (1998) "A Study of Quantity Surveying Practices in the Building Services Sector of Hong Kong" Asia Pacific Building and Construction Management Journal, Page 9 - Page 15 Volume Four December 1998 ISSN 1024-9540.



Subject Code	BRE440	<b>COST AND VALUE MANAGEMENT</b>
Level	3	
Contact Hours	42	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE347 or equivalent	<ul style="list-style-type: none"> <li>• Focus on both theories and applications of value management in different phases of a development,</li> <li>• Develop an appreciation for what can be accomplished using the techniques of VM and applied creativity, and</li> <li>• Identify management and technical issues that can be solved or addressed using the techniques of VM and critical thinking.</li> </ul>
Co-requisites	NIL	
Exclusions	NIL	
Subject Leader/ Lecturer/Dept.	S.W. Fong (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Have an understanding of the value management methodology</li> <li>2. Organize and manage value management workshops in different phases of a project life cycle</li> <li>3. Conduct function analysis and life-cycle costing for a project or a part of a project</li> <li>4. Exercise practical creativity skills to work with a team of stakeholders to arrive at innovative solutions for construction projects</li> <li>5. Ensure value for money for projects by applying value management tools in business situation or technical situations of a construction company</li> </ol>		
<b>Brief Syllabus Content:</b>		
Notion of value:- value, function and cost.		
Value management basics:- historical development; project selection (types, values, and timing); alternative workshop approaches (e.g. the 40-hour job plan, the Charette, the VM audit, and the contractor's change proposal).		
Value management methodology: - VM job plan (information, analysis, creativity, evaluation, development, proposal); function analysis, group dynamics, creativity, and problem-solving skills		
Life cycle costing for construction projects		
Comparison of value management and traditional cost management techniques.		
Case studies of the practice of value management in Hong Kong and overseas.		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):		
The class will be conducted through a combination of lectures, student discussions, group and individual exercises, and active student participation. Students will be called on to make classroom presentations. The class distribution will be approximately as shown below. The lectures form the core instructional material supported by directed reading, assignments, student exercises, and other course elements. Significant work is programmed to be accomplished by the students in project teams when working on a study. Students are expected to meet regularly outside of formal class meetings to pursue and develop the ability to work with teams.		
<u>Contact Hours</u>		
Lectures, seminars		42 hours
<u>Independent Study</u>		
Self study material		46 hours
Assignments		<u>32 hours</u>
		120 hours

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (assessment of student performance resulting from learning tasks):

Assessment:

Coursework	50%
Examination	50%

**Reading List:**

**Recommended:**

Akiyama, K. (1991), *Function Analysis: Systematic Improvement of Quality and Performance*, Productivity Press.

Connaughton, J.N. (1996), *Value Management in Construction: A Client's Guide*, Construction Industry Research and Information Association.

Dell'Isola, A.J. (1997), *Value Engineering: Practical Applications - for Design, Construction, Maintenance & Operations*, R.S. Means Company.

Fong, P.S.W. et al (1998), *Applications of Value Management in the Construction Industry in Hong Kong*, Dept. of Building & Real Estate, The Hong Kong Polytechnic University.

Hayden, G.W. (1996), *Value Engineering of Building Services*, Building Services Research and Information Association.

Institution of Civil Engineers (1996), *Creating Value in Engineering*, Thomas Telford.

Kelly, J. and Male, S. (1993), *Value Management in Design and Construction: The Economic Management of Projects*, E & F N Spon.

Norton, B.R. (1995), *Value Management in Construction: A Practical Guide*, Macmillan.

Park, R.J. (1999), *Value Engineering: A Plan for Invention*, St. Lucie Press.

Shen Q.P. and Liu G.W. (2003) Critical success factors for value management studies in construction, *Journal of Construction Engineering and Management*, American Society of Civil Engineers (ASCE), 129(5), 485-491.

**Supplementary:**

Ashworth, A. (1999), *Cost Studies of Buildings*, Longman.

Fowler, T.C. (1990), *Value Analysis in Design*, Van Nostrand Reinhold.

Kirk, S. J. and Dell'Isola, A. J. (1995), *Life Cycle Costing for Design Professionals*, McGraw-Hill.

Palmer, A. (1992), *A Comparison of US Value Engineering with British Cost Control Procedures*, Value and the Client, Surveyors Publications.

Subject Code	BRE441	<b>PROFESSIONAL STUDIES</b>
Level	4	
Contact Hours	ST:28 PW:126	
Student Effort Hours	200	
Assessment Method	Coursework 100%	
Credit Value	5	
Pre-requisites	BRE346	
Co-requisites	Nil	
Exclusions	Nil	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Encourage critical investigation, analysis and synthesis in solving problems in the surveying professional context. It provides an environment for the student to develop skills in identifying and solving problems and allows the integration of knowledge gained in separate subject areas. It promotes the students' understanding of interdisciplinary nature of the development process and develops team working.
Subject Leader/ Lecturer/Dept.	K.K. Lo (BRE)	
<b>Learning Outcomes:</b>  <i>Students will demonstrate their ability to:-</i>  1. Understand the major issues involved in the development process for application and compliance. 2. Appropriate the value of teamwork as an approach to tackle a project and problem-solving. 3. Integrate knowledge and skills acquired in various subject areas and to solve problems in the surveying professional context.		
<b>Brief Syllabus Content:</b>  A series of property related project scenarios will be set to replicate a situation which could be met in practice. Sometimes the restrictions of the study environment will require the scenario to be modified. The projects will require the students to make use of and integrate knowledge learnt from previous and current subject modules. Each project will include an element of group and individual work gears towards surveying professional disciplines. The projects require students to develop solutions creatively and to present recommendations systematically.		
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):  The projects will provide a student centered problem-based learning approach in a professional or industrial setting. The projects will be delivered by a team of project tutors together with visiting lecturers who are practising professionals in the fields, with overall co-ordination by one member of staff to ensure continuity and relevance of project subject matter. Project material will be co-ordinated at the start of each academic year to ensure quality and consistency of the project information given to the students.  This subject will be timetabled one day per week for project work at studio and consists of 28-week activities throughout 2 semesters.		
<b>Assessment strategy</b> ( <i>assessment of student performance resulting from learning tasks</i> ):  The subject will be assessed on the coursework projects. Each project will contain tasks such that marks can be awarded 50% group work and 50% individual work.		
<b>Reading List:</b>  Construction Journals, Databases, Statistics and Module Texts		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

Subject Code	BRE442	<b>FORECASTING &amp; COMPETITION IN THE BUILT ENVIRONMENT</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 40% Examination 60%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE345	1. Help students acquire the knowledge and skills to forecast and compete for work in the built environment.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	L. Y. Tang (BRE)	

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Select and employ appropriate techniques in price forecasting and strategies for improving survival and profitability.
2. Recognise the usefulness and limitations of competition and forecasting models.
3. Integrate risk management techniques with competition and forecasting models.
4. Analyse competitive performance and forecasting accuracy.
5. Draw conclusions and make recommendations on improving competitive performance and forecasting accuracy.

**Brief Syllabus Content:**

*Competition*

Auction theory: relationship between construction contract bidding, competitive fee bidding and land auctions.  
 Strategic management and competitive advantage: diversification; international contracting.  
 The competitive environment competition processes: level of competition; market conditions: survival and profitability; competitor analysis, decision to compete; pricing policy; competition strategy; risk in competing.  
 Monitoring competition performance: competitiveness and consistency in competing for construction contracts; market share and competitiveness.  
 Strategies for improving competitive advantage; subcontractor selection strategies.  
 Client objectives: negotiation; competitor prequalification, competition assessment, and award of contract.  
 Strategies for improving competitor prequalification.

*Forecasting*

Relationship between competition, bidding and forecasting  
 Designers' and contractors' approaches to forecasting; resume of forecasting techniques; deterministic and non-deterministic approaches to forecasting; risk in forecasting.  
 Accuracy and reliability of forecasts: factors affecting accuracy of forecasts; feedback in forecasting.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Lectures introduce the key issues followed by discussion on background reading and/or problem-solving sessions in the seminar. The problem-solving sessions will, in the main, consist of the analysis of data taken from construction projects, making decisions, drawing conclusions and making recommendations through the medium of report writing.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will each constitute 40% and 60% of the overall mark for the subject respectively.

The coursework grade will comprise two assignments. One coursework will be more practical in nature. The students will be given background information relating to a particular construction project and/or construction firm. They will be required to produce a forecast and/or bid price, justifying how they arrived at the forecast/bid price.

The other coursework will be more theoretical whereby students will be given an open ended question to discuss. An important part of this coursework will be that the students undertake the necessary background reading relating to the question and use the literature to support their argument.

The first piece of coursework may be undertaken on a group or individual basis. The second piece of coursework will be undertaken on an individual basis.

**Reading List:**

**Recommended:**

Ashworth A. (1994) *Cost Studies of Buildings*, Longman; Harlow

Brook M. (2004) *Estimating and Tendering for Construction Work*, Butterworth Heineman, Oxford

Cartlidge D. (2004) *Procurement of Built Assets*, Elsevier Oxford

Ferry D. and Brandon P.S. (1999) *Cost Planning of Buildings*, Blackwell Science, Oxford

Park W.R. & Chapin W.B. (1992) *Construction Bidding: Pricing for Profit*. John Wiley & Sons, New York

Seeley I. (1996) *Building Economics*, Macmillan, Basingstoke

Walker I. and Wilkie R. (2002) *Commercial Management in Construction*, Blackwell Oxford

Subject Code	BRE450	<b>BUILDING MAINTNEANCE FOR SUSTAINABILITY</b>
Level	4	
Contact Hours	LT:21; TU/LAB/ FIELD TEST:10.5/ 4.5 /6.0	
Student Effort Hours	120	
Assessment Method	Coursework 100%	
Credit Value	3	
Pre-requisites	BRE391 or equivalent	
Co-requisites	Nil	
Exclusions	BRE326	
Subject Leader/ Lecturer/Dept.	W.F. Tsang (BRE) W.S. Lu (BRE)	
		<b>Subject Aim:</b>  <i>This subject is intended to:</i>  <ol style="list-style-type: none"> <li>1. provide students an understanding and appreciation of sustainable construction/building</li> <li>2. equip students with the practical knowledge and skills in their future roles as building construction and maintenance professionals</li> <li>3. equip students with practical skills in building diagnosis of existing buildings</li> <li>4. provide students an understanding that sustainability can be achieved by constructing sustainable new buildings as well as preserving/maintaining/repairing existing buildings by prolonging their durability and service life</li> </ol>
<b>Learning Outcomes:</b>  <i>Students will demonstrate their ability to:-</i> <ol style="list-style-type: none"> <li>1. understand fundamental principles and various attributes of sustainability of the built environment in balancing economic, environmental and social objectives</li> <li>2. compare different current legislations, regulations, assessment schemes relating to building repair and maintenance</li> <li>3. conduct building pathology and defect diagnostics</li> <li>4. perform advanced testing and auditing of building fabrics on energy performance</li> <li>5. rehabilitate building elements through advanced technologies</li> </ol>		
<b>Brief Syllabus Content:</b>  <p><b>Need of sustainability</b> in global and local context - issues and impacts on environmental, economic and social sectors, Kyoto Protocol.</p> <p><b>Principle of construction sustainability:</b> concepts and principles, roles and responsibilities of building professionals.</p> <p><b>Strategy for sustainable construction:</b></p> <ul style="list-style-type: none"> <li>• active measures: <ul style="list-style-type: none"> <li>- design /construction stages: green building / materials, HKBEAM, BREEAM, LEED, BHHI</li> <li>- building in use : importance of building maintenance</li> </ul> </li> <li>• passive measures: <ul style="list-style-type: none"> <li>- legislations and regulations (e.g. on thermal, ventilation, electricity, etc.)</li> <li>- energy auditing and life cycle assessment</li> <li>- inspection for regular maintenance</li> </ul> </li> </ul>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Brief Syllabus Content: (Cont'd)**

**Building maintenance for sustainability:**

- choices of building materials - application, re-use and recycling; embodied energy in production
- rehabilitation
- condition appraisal, building inspection - Mandatory Building Inspection Scheme in Hong Kong
- different building defects diagnostic techniques and their applications and subsequent remedial maintenance work

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

The subject covers theoretical, conceptual, statutory as well as practical issues in building maintenance for sustainability. Most of these will be taught in lectures and reinforced in tutorials and seminars. Laboratory classes and field test will cover the experimental and practical aspects.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

The subject will be assessed by: a real life project, assignments and test.

**Reading List:**

**Recommended:**

1. CIB (1998), Sustainable development and the future of construction, *CIB report publication 225*, United States of America.
2. Claude-Alain Roulet, Flourentzos Flourentzou, Flavio Foradini, Philomena Bluysen, Chrit Cox, Claire Aizlewood (2006), Multicriteria analysis of health, comfort and energy efficiency in buildings, *Building Research & Information*, Volume 34, Issue 5 September 2006 , pages 475 – 482.
3. Hill, R.C. and Bowen, P.A. (1997). Sustainable construction: principles and a framework for attainment, *Construction Management and Economics*, 1997(15), pp. 223-239.
4. Raymond J. Cole, Shared markets: coexisting building environmental assessment methods, *Building Research & Information*, Volume 34, Issue 4 July 2006 , pages 357 – 371.
5. Shen, L. Y., Lu, W. S., Yao, H., and Wu, D. H. (2005b). 'An IT supported scoring method for measuring the environmental performance of construction activities', *Automation in Construction*, AIC Special Issue, 14 (2005), pp. 297-309.
6. Sjostrom, C. and Bakens, W. (1999). Sustainable construction: Why, how, and what, *Building Research & Information*, Vol. 27(6), pp. 347-353.
7. W.L. Lee, J. Burnett (2008), Benchmarking energy use assessment of HK-BEAM, BREEAM and LEED, *Building and Environment*, Volume 43, Issue 11, November 2008, Pages 1882-1891.
8. Warren L. Paul, Peter A. Taylor (2008), A comparison of occupant comfort and satisfaction between a green building and a conventional building, *Building and Environment*, Pages 1858-1870.
9. WCED (World Commission on Environment and Development), (1987). *Our common future*, Oxford University Press, 1-23.
10. MOC (1999). *A guide to sustainable development construction in China*, Ministry of Construction, 27-30.

Subject Code	BRE453	<b>BUILDING SERVICES II</b>
Level	4	
Contact Hours	42	
Student Effort Hours	Lect:28 Tut/Sem:14	
Assessment Method	Coursework 30% Examination 70%	<b>Subject Aim:</b>  <i>This subject is intended to:</i>  1. Provide further knowledge of building services engineering systems and an understanding of the importance of the quality of installation and proper co-ordination on the overall performance and maintainability of buildings.
Credit Value	3	
Pre-requisites	BRE303 or 392	
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	(BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Attend to details in respect of fixtures, fittings and finishes on the performance and maintainability of systems.</li> <li>2. Be able to properly co-ordinate the installation requirements of the building services equipment, especially with regard to management of sub-contractors work.</li> <li>3. Understand the various commissioning processes, and the impact on building performance.</li> <li>4. Understand the importance of maintenance to building services systems and its impact to the life-cycle-cost and methods to devise sound maintenance plans for building services systems.</li> </ol>		
<b>Syllabus Content:</b>		
<p>Integrated design: factors affecting selection of services/systems. Provision of space in the building to accommodate building services. Structural integrity of building services equipment. Sound and vibration attenuation features. Provisions for safe operation and maintenance.</p> <p>Building services engineering system for intelligent buildings: introduction to information transmission systems, communication and protection system, call systems, public address system and Building automation/management systems.</p> <p>The concepts and importance of energy conservation and energy efficiency for environmental protection, environmental protection and maintenance of building services systems, selection of environmentally friendly products and materials used in building services systems.</p> <p>Co-ordination and management of design and installation of various building services systems during the design and construction stages in particular the builder's works.</p> <p>Computer-aided design and installations of building services.</p> <p>Testing and commissioning of building services systems: fire safety systems, vertical transportation equipment ventilation systems, etc.</p> <p>Sick building syndrome.</p> <p>The impacts of life-cycle-cost on planning and implementation. An appreciation of capital and operating costs. Implication of low cost inefficient equipment, poor installation, inadequate access for maintenance.</p>		



**Learning and Teaching Approach:**

The subject can be divided into three main parts; introduction to complex building services systems, management and co-ordination of the design and installation of building services systems, and maintenance management for building services systems.

A “case oriented” approach is to be adopted for teaching the subject; A number of up-to-date case studies on building services systems of high-rise buildings are used to illustrate the current state-of-the-art on the design and operation of complex building service systems. Practitioners from the industries will be invited to present lecture on the management of the building services installations and on operation and maintenance of building services systems.

The subject will be delivered through lectures, laboratories and small groups tutorials. The lectures and laboratories aim at introducing theories, concepts and practicals whereas tutorials are for in-depth small group discussions.

**Assessment:**

Examination and coursework will contribute 70% and 30% of the overall mark for the subject respectively. One of the assignments will be in the form of case study; students will be asked to carry out a critical investigation of the building services systems of a building of their choice and to comment on the systems adopted, the installation and integration with other systems. Another assignment will be an essay on the management side of the module.

**Reading List:****Recommended:**

Stein B. Reynolds J.S. & McGuinness W.J. (1986) *Mechanical and Electrical Equipment for Buildings*, 7th Edition, Volume 1 & 2, John Wiley & Sons

Chadderton D.V. (1991) *Building Services Engineering*, E. & F.N. Spon

Hassan G. (1996) *Building Services*, Macmillan

Greeno R. (1996) *Building Services and Design*, Longman

Barton P.K. (1983) *Building Services Integration*, E & F.N. Spon

CIBSE (1994) *Building Services Maintenance Management*, CIBSE

**Supplementary:**

Hall F. (1988) *Essential Building Services & Equipment*, Newnes

Atkin B. (1993) *Intelligent Buildings: Application of IT and Building Automation to High Technology Construction Projects*, Unicom Seminars, England

Subject Code	BRE499	<b>DISSERTATION</b>	
Level	4		
Contact Hours	L/T 22.5 Guided Study & PW:184		
Student Effort Hours	320		
Assessment Method	Coursework 100%		<b>Subject Aim:</b>
Credit Value	8		<i>This subject is intended to:</i>
Pre-requisites	Level 3 core subjects		Encourage the student to take a critical and analytical view of an issue relevant to the construction and real estate industry and of particular concern to the Hong Kong and its neighbouring environments.
Co-requisites	Nil		
Exclusions	Nil		
Subject Leader/ Lecturer/Dept.	BRE Scheme		
<b>Learning Outcomes:</b>			
<i>Students will demonstrate their ability to:-</i>			
<ol style="list-style-type: none"> <li>1. Produce a dissertation research proposal with researchable topic related to the field of construction and real estate, appropriate research method, and a display of literature review.</li> <li>2. To complete a research leading to a dissertation.</li> </ol>			
<b>Notes:</b> 'Research Methods' is a major component leading to the learning and completion of Dissertation. Students <b>must complete</b> (i) all the assignments and tests of research methods and (ii) Dissertation on the prescribed submission date and <b>pass</b> both components i.e. Research Methods and Dissertation.			
<b>Research Methods: Brief Syllabus Content</b>			
<ol style="list-style-type: none"> <li>A. Concepts: Philosophy of sciences, theory, hypothesis, methodology, method, research objective, problem statement, classification of research, etc.</li> <li>B. Process: Literature search and review, referencing and plagiarism, work plan, authorship skills, data assembly, time management, writing up, etc.</li> <li>C. Qualitative research: strategy, approaches, methods, analysis, examples, limitations, etc.</li> <li>D. Quantitative techniques: such as descriptive statistics, hypothesis testing, correlation and regression analysis, Analytic Hierarchy Process, Expected Value Model, and use of computer software to handle statistical problems, etc. (<i>Remarks: Students are expected to learn these techniques in more details and many other relevant quantitative techniques by their own initiatives.</i>)</li> <li>E. Writing out a dissertation proposal.</li> </ol>			
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):			
Lectures will be used to present concepts and principles of the various subject areas. Tutorial sessions will be used for discussion, problems solving and hands-on experience. Students are expected to discuss at tutorials with tutor(s) and complete written assignments. They will receive feedback from the tutor(s).			
<b>Dissertation Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> ):			
Academic leadership for the Dissertation is provided by the Dissertation Co-ordinator assisted by the supervisors who are BRE academic staff with research experience.			
Students will identify a topic in the field of construction and real estate to study in depth in the final year. The Dissertations are grouped into a number of study areas within the research theme of the Department such as real estate investment and finance, land and construction economics, construction management and construction technology and science.			
<b>For BEM students</b> will be advised to identify a topic in the field of Building Engineering and Management to study in depth in the final year. The topic should be engineering-oriented or engineering related area in construction. The Dissertations are grouped into a number of study areas within the research themes of the Department such as construction technology and science, production engineering, production & contract management, engineering economics, construction quality in engineering works, application of information technology in the building industry, engineering materials, etc.			

Occasionally, if a student proposes a topic which is not within the context of engineering orientation, consideration and prior approval need to be sought from the BEM Programme Management Team.

Each student will work under the guidance of a supervisor and, if necessary, a second supervisor may be appointed to assist in project supervision. The project supervision is timetabled for one hour per two weeks over the final year, but students are expected to devote about a day per week of their own time to carry out study and research work.

**Students are encouraged to formulate a testable hypothesis with theoretical model or justifications; carry out an empirical test on the hypothesis; and draw inference(s) on research and practical implications from the findings.**

**Research Methods Coursework Assessment strategy** (*assessment of student performance resulting from learning tasks*):

The coursework mark will be based on short tests, assignments, seminar and discussion. The approach to coursework assessment is guided by two principles. First, the need to assess the extent to which the students have achieved the learning outcomes with respect to grading criteria. Second, the assessment itself should contribute in some way towards reflection and learning of the importance of research methods in Dissertation.

Half of the total coursework mark will be devoted to qualitative research methods (i.e. literature review and dissertation proposal). The other half will be based on quantitative (statistical) approaches (i.e. an empirical test on a hypothesis).

**Dissertation Assessment strategy** (*assessment of student performance resulting from learning tasks*):

The assessment of the Dissertation is based on students' ability to develop and demonstrate the following attributes:-

- (a) to critically evaluate information;
- (b) to take personal initiative and to think independently;
- (c) to be able to identify the scope and limitation of collected data;
- (d) to make value judgements; and
- (e) to communicate clearly an argument and draw logical and substantiated conclusions.

The details of assessment procedures are outlined in Guidance notes for the presentation of the Final Year Dissertation.

#### **Reference List:**

##### **Essential:**

Bell J. (1993) *Doing Your Research Project*, Open University Press

Fellows R. and Liu A. (1997) *Research Methods for Construction*, Blackwell-Science

HKPU Building and Real Estate Department (1999) *Guidance Notes for the Presentation of Final Year Dissertation*, HKPU, BRE

Holt G. (1998) *A Guide to Successful Dissertation Study for Students of the Built Environment*, 2<sup>nd</sup> edition, The Built Environment Research Unit, University of Wolverhampton

Hussey, J. and Hussey, R. (2003) *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*, 2<sup>nd</sup> edition, Basingstoke: Palgrave Macmillan, England

Lucey T. (1992) *Quantitative Techniques ELBS*

Naoum S.G. (1999) *Dissertation Research and Writing for Construction Students*, Butterworth-Heinemann

Tan, W. (2002) *Practical Research Methods*, Pearson Education Asia Pte Ltd., Singapore, pp. 409, ISBN 981-4119-09-1

Hui, E.C.M. and Yiu, C.Y. (2003), Market Dynamics of Private Residential Real Estate Price – An Empirical Test in Hong Kong, *Journal of Financial Management of Property and Construction*, 8(3), Dec., 155-165

Chau, K.W., Leung, A.Y.T., Yiu, C.Y. and Wong, S.K., (2003), Estimating the Value Enhancement Effects of Refurbishment, *Facilities*, 21(1/2), 13-19.

Yiu, C.Y., Ho, H.K., Lo, S.M. and Hu, B.Q. (accepted in 2004 Jan) Performance Evaluation for Cost Estimators by Reliability Interval Method, *Journal of Construction Engineering and Management*, ASCE

Leung, A.Y.T. and Yiu, C.Y. (eds), *Building Dilapidation and Rejuvenation in Hong Kong*, Hong Kong: Joint Imprint of CityU Press and the Hong Kong Institute of Surveyors.

Lo, S.M., Yiu, C.Y. and Lo, A. (2003 Nov) An analysis of attributes affecting urban open space design and their environmental implications, *Management of Environmental Quality*, 14(5), 604-614.

Xu, T. and Tiong, R.L.K. (2001) Risk assessment on contractors' pricing strategies, *Construction Management and Economics*, 19, 77-84

#### **Recommended:**

Chau K.W., Raftery J. and Walker A. (1998) The Baby and the Bathwater: Research Methods in Construction Management, *Construction Management and Economics*, Vol. 16, No. 1, pp.99-104

Harris R. and Cundell I. (1995) Changing the Property Mindset by Making Research Relevant. *Journal of Property Research*, 12, pp.75-78

Kumar R. (1996) *Research Methodology: A Step-by-Step Guide for Beginners*, Addison Wesley Longman

Levin R.I. and Rubin D.S. (1998) *Statistics for Management*, 7th edition, Prentice-Hall

Lizieri C. (1995) Comment: Relevant Research and Quality Research: the Researcher's Role in the Property Market, *Journal of Property Research*, 12, pp.163-166

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Raftery J., McGeorge D. and Walters M. (1997) Breaking Up Methodological Monopolies: A Multi-paradigm Approach to Construction Management Research, *Construction Management and Economics*, 15(3), pp.291-297

Pindyck, R.S. and Rubinfeld, D.L. (1998) *Econometric Models and Economic Forecasts*, 4<sup>th</sup> Edition, Boston: McGraw-Hill International Editions.

Kennedy, P. (2003) *A Guide to Econometrics*, 5<sup>th</sup> Edition, USA: Blackwell Publishing.

Saaty, T.L. (1980), *The Analytic Hierarchy Process: Planning, Priority Setting, Resources Allocation*, London: McGraw-Hill

Mustafa, M.A. and Ryan, T.C. (1990), Decision Support for Bid Evaluation, *Project Management*, 8(4), 230-235

Render, B. and Stair, R.M. Jr (2000) *Quantitative Analysis for Management*, 7th Edition, Prentice Hall, New Jersey.

SPSS/PC Reference Manual

EViews 4.0 User's Guide

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

Subject Code	BRE4051	<b>PROJECT EVALUATION AND DEVELOPMENT</b>	
Level	4		
Contact Hours	Seminar/Tutorial/ Self Study		
Student Effort Hours	200		
Assessment Method	Coursework 100%		<b>Subject Aim</b>
Credit Value	5		<i>This subject is intended to:</i>
Pre-requisites	Nil		Develop students' ability to critically evaluate, synthesise and integrate knowledge gained from a variety of sources related to the construction development process; and Provide the skills necessary to document and present proposals for the development of a construction project from inception to hand over.
Co-requisites	Nil		
Exclusions	Nil		
Subject Leader/ Lecturer/Dept.	T.I. Lam (BRE) H.Q. Fan (BRE)		
<b>Learning Outcomes</b>			
<i>Students will demonstrate their ability to:</i>			
<ol style="list-style-type: none"> <li>1. Evaluate the major issues involved in the process of developing a site for a client.</li> <li>2. Identify the relevant laws, regulations and procedures that must be complied with through the development process.</li> <li>3. Effectively adopt a teamwork approach to developing a project.</li> <li>4. Propose solutions to complex technology and management problems associated with the proposal and development of a project.</li> <li>5. Communicate effectively in a managerial role, including effective presentation of analysis, justification of recommended actions, and persuasive messages intended to affect the perception of others.</li> </ol>			
<b>Brief Syllabus Content</b>			
<p>Students are required to select a site and formulate original proposals for its development or redevelopment. This involves addressing the whole range of activities involved at the conception, design, construction and disposal stages of a typical construction project. The intention is to improve students' comprehension of the whole of the development process. The project must not utilize existing proposals for the land, and must not be a case study of what someone else has already proposed, designed or built. The fact that the vacant land or existing buildings are real means that the planning, commercial, and amenity aspects can be thoroughly researched.</p>			
<b>Learning and Teaching Approach</b> ( <i>tasks and activities designed to achieve learning outcomes</i> )			
<p>Seminars are used at junctures throughout the project as a mean for tutors to impart the project brief and stages of work to students, and as a platform for students to present their work to tutors upon the conclusion of each of the two phases. Periodic tutorials reinforce tutor seminars and are conducted by tutors with groups of five students at a time.</p> <p>The pedagogical philosophy for this subject is student centered learning. For the most part, students are required to use a self study approach by using their own initiative to gain knowledge and discover ways in which to apply it to their project. The project tutors act mainly as mentors, facilitators, and assessors.</p>			

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (*assessment of student performance resulting from learning tasks*)

- Students are assessed, individually and as a team, on their ability to analyse, critically evaluate, and synthesis information related to the integration of knowledge into the development and construction process of their project.
- The project is divided into Phase 1 and Phase 2. The first phase is carried out individually, whilst the second phase is carried out in teams of five.
- Each team is assigned a tutor who assesses the oral and written presentations for each phase in accordance with the prevailing PolyU grading system.

**Phase 1 - Project Proposal.** This is a piece of individual work comprising Stage (a) and Stage (b). During this phase each student will evaluate one potential site for development and present it to their team. The team, in consultation with their tutor, will evaluate the feasibility of the proposals and select one for further development.

**Phase 2 - Project Development.** This phase, comprising Stage (c), (d), (e), (f) and (g) is developed and presented as a team. The Written Report is assessed as a team effort, although each member will also be assessed individually on his or her oral presentation of a particular stage. This phase also includes an individual online test.

<b>Phase 1 Stage (a)</b>	Selection of site
<b>Stage (b)</b>	Initial appraisal
<b>Phase 2 Stage (c)</b>	Procurement method
<b>Stage (d)</b>	Design team briefing
<b>Stage (e)</b>	Planning approval
<b>Stage (f)</b>	Production and control
<b>Stage (g)</b>	Proposals for disposal

Weighting

	<b>Individual</b>	<b>Team</b>
<b>Phase 1 Project Proposal</b>		
Oral Presentation	20%	-
Written Report	30%	-
<b>Phase 2 Project Development</b>		
Oral Presentation	10%	-
Written Report	-	25%
On-line Test	15%	-
<b>Total Weighting</b>	<b>75%</b>	<b>25%</b>

**Reading List**

Cadman D. (1995). *Property Development*. E & F.N. Spon

Collier C.A. (1994). *Construction Funding: Where the Money Comes From*. Willey

Darlow C. (1988). *Valuation and Development Appraisal* Estates Gazette

Harrison, F.L. (1992). *Advanced Project Management: A Structured Approach*. Gower

Higson, C.J. (1995). *Business Finance*. Butterworths

Rougvie A. (1987). *Project Evaluation and Development*. Mitchell

The Chartered Institute of Building (1996). *Code of Practice for Project Management: For Construction and Development*

Walker A. (1989). *Project Management in Construction*. Blackwell Science

Subject Code	BRE4281	<b>CONSTRUCTION ENGINEERING MANAGEMENT</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination: 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	BRE339 or BRE350	Develop the students' ability to apply decision making theories and operational research techniques in the management of construction projects.
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	D.W.M. Chan (BRE) L.Y. Shen (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Ability to identify and diagnose management problems accurately and effectively across a wide range of construction engineering activities, including management practices, human resources and plant management, operations, and strategic management.</li> <li>2. Ability to formulate construction engineering management problems into analytical models.</li> <li>3. Ability to find out and plan sound solutions from various analytical models by using quantitative (operational research) techniques.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<p>Construction productivity measurement and analysis  Site management and method statements  Construction plant and materials management  Risk management for construction projects  Construction management practices in Mainland China  Fundamentals of decision theory, utility theory and sensitivity analysis.  Application of linear and dynamic programming in construction project management and process control.  Inventory control theory and applications.  Monte Carlo simulation and applications.</p>		
<b>Learning and Teaching Approach:</b>		
<p>Student learning will be facilitated through a combination of self-study and class contact sessions. The self-study will include guided reading, library searching skills, problem solving, reflection and textual &amp; graphical communication as individuals and as part of a group. Some assignments will involve the training and development of problem analysis and presentation of results. Class contact will include lectures for providing an overall framework to topic areas and for those areas where textbooks do not provide adequate coverage. Small group sessions will be used for a combination of student-led seminars, role plays and workshop exercises for skill development and the raising of ethical awareness.</p>		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Coursework and examination will constitute equal parts of the overall marks of the subject respectively. The coursework mark will be based on role play, seminar discussion, presentation, workshops and problem-based assignments. Marks will be allocated on group and individual basis. Typical coursework assessment criteria include:

- logical structure;
- clarity and depth of thought;
- quality of written presentation;
- knowledge and information;
- problem analysis skills;
- oral and visual presentation skills;
- participation and leadership.

**Reading List:**

**Recommended:**

Chan D.W.M. and Kumaraswamy M.M. (1995) "A Study of the Factors Affecting Construction Durations in Hong Kong". *Construction Management and Economics*, 13(4), July, 319-333.

Chan D.W.M. and Kumaraswamy M.M. (1995) "Effects of Technology and Site Productivity on Construction Times of Building Projects in Hong Kong". *Proceedings of the 16th Annual ASEM Conference*, American Society for Engineering Management, 21-23 September 1995, Washington DC, USA, 309-316.

Dai J.K., Goodrum P.M. and Maloney W.F. (2007) "Analysis of Craft Workers' and Foremen's Perceptions of the Factors Affecting Construction Labour Productivity". *Construction Management and Economics*, 25(11), November, 1137-1150.

Harris F. and McCaffer R. (2001) *Modern Construction Management*, 5<sup>th</sup> Edition, Blackwell Science: Oxford

Kumaraswamy M.M. and Chan D.W.M. (1995) "Determinants of Construction Duration". *Construction Management and Economics*, 13(3), May, 209-217.

Olomolaiye P.O., Jayawardane A.K.W. and Harris F.C. (1998) *Construction Productivity Management*, Addison Wesley Longman, Edinburgh, England: Chartered Institute of Building.

Render Barry (1997) *Quantitative Analysis for Management*. Upper Saddle River, N.J.: Prentice Hall, 6<sup>th</sup> Edition, Longman Ltd., Ascot, England: Chartered Institute of Building

Shen L.Y., Lu W.S., Li H. and Shen Q.P. (2003) "Computer-aided decision support system for assessing contractor's competitiveness", *Journal of Automation in Construction* Vol. 12, No.5, 577-587.

Shen L.Y., Li Q.M. and Li H. (2002) 'Alternative concession model for BOT-contract project', *Journal of Construction Engineering and Management*, ASCE, 128(4), 326-331.

Shen L.Y., Wu M. and Wang J.Y. (2002) 'A model for assessing the feasibility of construction project in contributing to the attainment of sustainable development', *Journal of Construction Research*, Vol. 3, No.2, 255-271.

Shen L.Y., Wu W.C., Ng S.K. (2001) 'Risk Analysis for Construction Joint Ventures in China' *Journal of Construction Engineering and Management*, ASCE, 127(1), 76-82.

Shen L.Y., Drew D., Zhang Z.H. (1999) 'An Optimal Bidding Model for Price-Time Bi-parameter Construction Contracts' *Journal of Construction Engineering and Management*, ASCE, Vol. 125, No.3, pp.204-209.



Fisher N. and Shen L.Y. (1992) *Information Management within a Contractor - a Model for the Flow of Data* Thomas Telford Publications, U.K., ISBN 0-7277-1666-2 (This book is based on the research studies 'information management system for construction companies'), pp.260.

Shen L.Y. (1999) 'Risk Management', *Building in Value: Pre-design Issues*, (Ed., Best & De Valence) Arnold Publishers, ISBN: 0340741600, pp.248-267.

Tang S.L., Ahmad I.U., Ahmed S.M. and Lu M (2004) *Quantitative Techniques for Decision Making in Construction*, Hong Kong University Press: Hong Kong.

**Journals:**

*Hong Kong Engineer: The Journal of the Hong Kong Institution of Engineers*, Printers' Circle Ltd

*Journal of Building and Construction Management*, CIOB(HK), HKIE (Bldg. Div.) and ACMA

*Australian Institute of Building Papers*, AIB

*Construction Management and Economics*, Routledge, Taylor & Francis

*Engineering, Construction and Architectural Management*, Blackwell Science

*HKIE Transactions*, Henderson & Associates

*Journal of Construction Engineering and Management*, ASCE

*Journal of Management in Engineering*, ASCE

*International Journal of Construction Management*

*International Journal of Project Management*

*Building and Environment*

*Building Research and Information*

Subject Code	BRE4291	<b>REAL ESTATE MARKETING</b>
Level	4	
Contact Hours	Lect:21 Sem/Tut:21	
Student Effort Hours	120	
Assessment Method	Coursework 50% Examination 50%	<b>Subject Aim:</b>
Credit Value	3	<i>This subject is intended to:</i>
Pre-requisites	Nil	<ol style="list-style-type: none"> <li>1. Examine the applications of marketing theories in real estate context.</li> <li>2. Comprehend marketing practices and regulations in the real estate industry.</li> </ol>
Co-requisites	Nil	
Exclusions	Nil	
Subject Leader/ Lecturer/Dept.	H.T. Choy (BRE)	
<b>Learning Outcomes:</b>		
<i>Students will demonstrate their ability to:-</i>		
<ol style="list-style-type: none"> <li>1. Apply marketing theories in the real estate industry.</li> <li>2. Formulate marketing strategies for both primary and secondary market properties.</li> <li>3. Evaluate the effectiveness of marketing strategies adopted by real estate marketers.</li> <li>4. Identify and diagnose the common agency malpractices.</li> <li>5. Comprehend of the increasingly sophisticated estate agency industry, especially in light of the introduction of regulatory controls.</li> </ol>		
<b>Brief Syllabus Content:</b>		
<i>Real Estate Marketing</i>		
Environmental Analysis and Market Segmentation: factors affecting real estate marketing such as the demographic-economic, political-legal, technological-natural and social-cultural environments; identification of target customers; consumer behaviour and the buying process.		
Marketing Mix: Product Management – Ansoff Matrix, Growth Share Matrix, product attributes and product life cycle; Pricing Strategies - general pricing approaches, new product pricing strategies, product-mix pricing strategies and price adjustment strategies; Promotion - communication process, media choosing, feedback collection and promotion budget, and Placing Channels: functions of distribution channels, channel behaviour and organisation, channel design and management decisions.		
Marketing Plan: research and forecasting, formulation, implementation, control and budgets.		
<i>Agency Practices</i>		
Estate Agency Industry: functions, structure, organisation, management, business planning and competition.		
Agency Services: definition and roles of estate agent, listing properties, advertising, engagement agreement, inspection and viewing of property, negotiation skills, drafting provisional agreement for sale and purchase/tenancy and follow-up works.		
Codes of Conducts and Regulatory Controls: malpractices of estate agents, liabilities and indemnity, professional and regulatory controls, estate agent associations, regulatory authorities, licensing and comparative studies to overseas markets.		

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*

**Learning and Teaching Approach** (*tasks and activities designed to achieve learning outcomes*):

Theories, applications and related regulations will be introduced in lectures, supplemented with case studies, presentations and discussions during seminars. Computer aided packages, mainly through Internet technology, will be provided to students for self-learning purpose.

**Assessment strategy** (*assessment of student performance resulting from learning tasks*):

Examination and coursework will each constitute 50% of the overall mark for the subject.

Examination: (50%) Students are required to sit a two hour examination. The examination will be set to test the applications of marketing theories and the students' understanding on the market structure of the industry. The students will be asked to critically examine the marketing strategies adopted by real estate developers, agency practices and impacts imposed by the introduction of estate agency regulations.

Coursework: (50%) Essay and project type questions supplemented with presentations.

- (i) will be set to ask the student to formulate marketing plans on conventional as well as innovative real estate products.
- (ii) A computer-aided time constraint assessment will be used to test the student: understanding on the Estate Agency Ordinance and practice regulations.

**Reading List:**

**Recommended:**

Kotler, P. and Armstrong, G. (1996) *Principles of Marketing*, 7th ed., Printice Hall

Bevan, O.A. (1991), *Marketing and Property People*, Macmillan

Choy, H.T. (1998), "Real Estate Marketing", *Real Estate Development in Hong Kong* ed. Poon and Chan, PACE, pp.223 - 237

Cohen, W. (1994), *The Marketing Plan*, John Wiley & Sons

Shenkel, W.M. (1994), *Marketing Real Estate*, Prentice Hall

Planning, Environment and Lands Branch (1994), *Report of the Working Group on Regulation of Estate Agents*, Hong Kong Government

Consumer Council (1996), *How Competitive is the Private Residential Property Market?* , Hong Kong Consumer Council

HKSAR Government, Estate Agency Ordinance

**Supplementary:**

Kotler, P. (1996), *Marketing Management: Analysis, Planning, Implementation, and Control* 9th ed., Prentice Hall

*Proposed Practising Guidelines for Real Estate Agents (1995)*, Society of Hong Kong Real Estate Agents and Hong Kong Real Estate Agencies Association

Planning, Environment and Lands Branch (1994), *Report of Task Force on Land Supply and Property Prices*, Hong Kong Government