THE HONG KONG POLYTECHNIC UNIVERSITY

DEPARTMENT OF BUILDING AND REAL ESTATE

Higher Diploma in Building Technology & Management

For Student Intake 2017/2018

September 2017

This Definitive Programme Document is subject to review and changes which the programme offering Faculty / Department / School can decide to make from time to time. Students will be informed of the changes as and when appropriate.

This document should be read in conjunction with the AS Handbook on Academic Regulations and Procedures.

Department of Building and Real Estate
Faculty of Construction and Environment

September 2017

Table of Contents

1. Introduction

The Higher Diploma in Building Technology and Management (HDBTM) of BRE has been operating since 1974, first as a 3-year full-time programme, and then redesigned as a 2-year curriculum with respect to changes in entrance requirements on qualification over the years. Starting from 2002/2003, the intake of students to the HDBTM has been divided into two distinct programmes; HDBTM in Engineering and HDBTM in Surveying.

The current 2-year full-time programme using HKDSE result as entrance requirements has been implemented since 2012/13 academic year. Currently both HDBTM programmes comprise 69 credits plus 3 training credits.

2. The Rationale, Aims and Intended Learning Outcomes (ILOs) of HDBTM

Higher diploma education in building and construction should be intrinsically associated with the industry, for which HDBTM will continue to serve. HDBTM is designed to provide a course of study which is not only academically rigorous but also provides the appropriate technical expertise in the production engineering discipline and surveying discipline, such that graduates are well prepared to play a proactive role within the construction industry.

HDBTM consists of two distinct programmes in engineering and surveying disciplines. Such programmes are namely HDBTM in Engineering and HDBTM in Surveying, with a common first year semester one. Students are allowed to change discipline after their first year semester one study. Every application for change of discipline has to be supported with reasons and shall be subject to the approval by the programme leader.

HDBTM aims to provide a fundamental education for students within an academic environment to develop their knowledge, skills, and abilities by application of the methods and practices involved in the evaluation, design, construction, and maintenance of buildings with underpinning studies of technologies, economics, law, management, and technology. The two programmes are designed for the graduates to continue their career development to become building engineering and surveying technicians or professionals for Hong Kong, the Mainland, and other international markets.

Upon successful completion of HDBTM, students are expected to attain the following abilities:-

Category A Professional/academic knowledge and skills

A1. to possess the basic knowledge of the engineering principles, processes and methods for the successful completion of construction projects.

A2. to have a basic knowledge of construction management and operational practices required to support efficient building production.

A3. to be able to identify, analyse, and solve engineering problems arising from the construction operation.

A4. to be conversant with the specification, design, construction, control, and management that facilities the successful completion of the production of building projects.

A5. to appreciate the managerial, legal, social, and ethical responsibilities of a technician engineer employed in building production.

The surveying discipline graduates will gain a stronger economics and legal grounding, whereas the engineering discipline graduates will gain a stronger technological grounding.

Category B Attributes for all-roundedness

B1. to possess skills to identify, analyze, and solve problems.

B2. to have an understanding of professional, social and ethical responsibilities.

B3. to communicate effectively.

B4. to reflect on knowledge gap for life time learning.

B5. to contribute as an effective team member.

B6. to transfer and replicate knowledge and skills to other industries.

B7. to identify contemporary issues.

3. The Curriculum Framework of HDBTM

HDBTM is a two-year full time programme with a mandatory summer term in between the 2 years, and comprises 69 credits plus 3 summer training credits. Within the 69 credits, there are 5 General University Requirements (GUR) subjects (15 credits in total) including 9 credits in GUR language subjects and 6 credits in Cluster Area Requirements (CAR) subjects (24.66% of the total credits). The PolyU curriculum framework for Higher Diploma programmes is shown as below:-

Minimum credit requirement for graduation		60 credits
General University Requirements	15-18 credits	
Discipline-Specific Requirements	42-57credits	
Maximum credits allowed without incurring a higher tuition fee		75 credits

The General University Requirements for Higher Diploma Programmes (HDGUR) recommends higher diplomas in PolyU to have at least 15 credits of HDGUR or up to 18 credits of HDGUR with the following distributions:-

Area	Credits
HD Language and Communication Requirements (HDLCR) [9 credits; 6 credits in English and 3 credits in Chinese]	9
Cluster-Area Requirements (CAR) [6 credits; 3 credits should be in subjects designated as "China-related"]	6
Freshman Seminars	3
Total GUR credits	18

HDBTM complies with the above PolyU required framework by including 9 HDLCR credits and 6 CAR credits in the curriculum.

4. The Entry Requirement of HDBTM

The minimum entrance requirements of HDBTM are set at Level 2 in five HKDSE subjects including English Language and Chinese Language, which are in line with the general PolyU requirement for higher diploma programmes. There are no preferred subjects for HDBTM and the other entrance requirements are in line with the admission policies of BRE and FCE.

5. Programme Management

The programme management and operation of HDBTM shall follow the PolyU's *"Guidelines and Regulations for Programme Planning, Validation and Management"*. The Departmental Programme Committee for the HDBTM will exercise the overall academic and operational responsibility for the programme and its/their development within defined policies, procedures and regulations. The composition of the Programme Committee shall comprise of the Programme Leader (Chairman), Deputy Programme Leader and Programme Counselor(s). The Departmental Programme Committee(s) will meet at least twice a year. Extra meeting(s) will be convened at the request of the Chairman or of one-third of its membership or of the Chairman of the Senate. The Programme Leader will be a core member of the Departmental Undergraduate Programme Committee (covering Bachelor's degree and sub-degree levels).

6. The Progress Pattern and Subject Matching for HDBTM

Table 1: Progression Pattern in General

Progression Pattern Summary (2017)									
Higher Diploma in Building Technology and Management									
Stage 1 (Year 1)									
	Semester 1 (13weeks)	**Eng**	**Sur**				Engineering Related Subjects	Building Surveying (BS)	Quantity Surveying (QS)	Estate Surveying (GP)
GUR	LCR subject 1	3	3	Same as the BRE degree programmes						
GUR	LCR subject 2	3	3							
GUR	CAR subject 1	3	3							
CE114	Land Use & Sustainable Environment	3	3				3			
CE123	Managing the Built Environment	3	3				2			
BRE222	Workshop Practice & Draftsmanship	1.5	1.5	Tailor-made for HDBTM			3			
	Semester 2 (13 weeks)									
GUR	LCR subject 3	3	3	Same as all the BRE degree programmes			1			
AMA1110	Basic Mathematics I	3	3							
IC301	Industrial Safety I	1	1				1			
CSE20290	Introduction to Geotechnology	3		BEM			3			
BRE206	The Legal Context for Construction and Real Estate (CRE)		3		Prop. Mgt.	Sur.				
BRE210	Information and Data Analysis	3	3	Tailor-made for HDBTM			1.5			
BRE222	Workshop Practice & Draftsmanship	1.5	1.5	Tailor-made for HDBTM						
	Stage 1 Total Credits	31	31							
	Summer Semester 2 (7 weeks)									
BRE274	Work Training and Building Information Modelling (Summer Semester)	3	3	Training Credits			2.5			
Stage 2 (Year 2)										
	Semester 1 (13 weeks)	Eng	Sur							
BRE2031	Environmental Science	3	3	Same as the BRE degree programmes			3			
BRE261	Construction Technology & Materials I	3	3				2.5			
BRE263	Construction Eonomics & Finance	3	3							
GUR	CAR Subject 2	3	3				1			
ELC3421	English for Construction and Environmental Professionals	3	3							
BRE271	Measurement & Estimating	3	3	Tailor-made for HDBTM			1.5			
BRE315	Property Valuation		3	For GP students only						yes
	Semester 2 (13 weeks)									
BRE262	Project Studio	3	3	Same as all the BRE degree programmes			3			
BRE349	Building Services I	3	3				3			
LSGI2961	Engineering Surveying	3		BEM			3			
BRE217	Planning & Development		3		Prop. Mgt.	Sur.				
BRE337	Property Law		3	For GP students only						yes
BRE272	Project Supervision & Contract Administration	3	3	Tailor-made for HDBTM			2	yes	yes	
BRE273	Construction and Maintenance Technology	3	3	Tailor-made for HDBTM			3	yes	yes	
BRE275	Individual & Integrated Project	5	5	Tailor-made for HDBTM			4.5			
	Stage 2 Total Credit 2	38	38							
	Programme Total Credits	69	69							
	Summer Training Credits	3	3							
							Total Credits for Each Specific Surveying Discipline =>	6 BS	6 QS	6 GP

7. General Assessment Regulations

7.1 Assessment grades shall be awarded on a criterion-referenced basis. A student's overall performance in a subject shall be graded as follows:-

Subject grade	*Short description*	*Elaboration on subject grading description*
A+	Exceptionally Outstanding	The student's work is exceptionally outstanding. It exceeds the intended subject learning outcomes in all regards.
A	Outstanding	The student's work is outstanding. It exceeds the intended subject learning outcomes in nearly all regards.
B+	Very Good	The student's work is very good. It exceeds the intended subject learning outcomes in most regards.
B	Good	The student's work is good. It exceeds the intended subject learning outcomes in some regards.
C+	Wholly Satisfactory	The student's work is wholly satisfactory. It fully meets the intended subject learning outcomes.
C	Satisfactory	The student's work is satisfactory. It largely meets the intended subject learning outcomes.
D+	Barely Satisfactory	The student's work is barely satisfactory. It marginally meets the intended subject learning outcomes.
D	Barely Adequate	The student's work is barely adequate. It meets the intended subject learning outcomes only in some regards.
F	Inadequate	The student's work is inadequate. It fails to meet many of the intended subject learning outcomes.

'F' is a subject failure grade, whilst all others ('D' to 'A+') are subject passing grades. No credit will be earned if a subject is failed.

7.2 A numeral grade point is assigned to each subject grade, as follows:-

Grade	*Grade Point*
A+	4.5
A	4
B+	3.5
B	3
C+	2.5
C	2
D+	1.5
D	1
F	0

a. Grade Point Average

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:-

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

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

In addition, the following subjects will be excluded from the GPA calculation:-

(i) Exempted subjects
(ii) Ungraded subjects
(iii) Incomplete subjects
(iv) Subjects for which credit transfer has been approved without any grade assigned
(v) Subjects from which a student has been allowed to withdraw (i.e. those with the grade 'W')

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 thus 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.

The Weighted GPA will be used as a guide to help determine award classifications, and the level weighting to different subjects of all disciplines and programmes will need to be specified in the Definitive Programme Document.

Weighted GPA will be computed as follows:-

$$\text{Weighted GPA} = \frac{\sum_{n} \text{Subject Grade Point x Subject Credit Value x } W_l}{\sum_{n} \text{Subject Credit Value x } W_l}$$

Where W_l = weighting to be assigned according to the level of the subject

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 point obtained in the final attempt will be included in the GPA calculation.

For calculating the weighted GPA (and award GPA) to determine the Honours classification of students who satisfy the graduation requirements of Bachelor's degree awards, a University-wide standard weighting[1] will be applied to all subjects of the same level, with a weighting of 2 for Level 1 and 2 subjects, a weighting of 3 for Level 3 and 4 subjects. Same as for GPA, Weighted GPA is capped at 4.0.

Any subjects passed after the graduation requirement has been met will not be taken into account of in the grade point calculation for award classification.

[1] Requests for deviation from this University-wide standard require specific approval by the Academic Regulations Committee.

b. Progression/Academic Probation

The Board of Examiners shall, at the end of each semester (except for Summer Term unless there are students who are eligible to graduate after completion of Summer Term subjects), determine whether each student is

(i) eligible for progression towards an award; or

(ii) eligible for an award; or

(iii) required to be deregistered from the programme.

When a student has a Grade Point Average (GPA) lower than 2.0, he will be put on academic probation in the following semester. Once when a student is able to pull his GPA up to 2.0 or above at the end of the probation semester, the status of "academic probation" will be lifted. The status of "academic probation" will be reflected in the examination result notification but not in transcript of studies.

c. Deregistration

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

(i) the student has exceeded the maximum period of registration for that programme as specified in the definitive programme document; or

(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 the above, a student may be deregistered from the programme enrolled before the time specified in (ii) or (iii) above if his academic performance is poor to the extent that the Board of Examiners deems that his chance of attaining a GPA of 2.0 at the end of the programme is slim or impossible.

8. University Graduation Requirements

All candidates qualifying for the full-time Higher Diploma in Building Technology and Management offered from 2014/15 onward must meet:-

1. The University Graduation Requirements: 69 credits plus 3 summer training credits. Within the 69 credits, there should be 15 credits of GUR subjects (of which 9 credits are GUR language subjects and 6 credits are CAR subjects).

2. Earn a cumulative GPA of 2.00 or above at graduation.

The following are guidelines for Boards of Examiners' reference in determining award classifications:-

Award classification	**Guidelines**	**Award GPA**
Distinction	The student's performance/attainment is outstanding, and identifies him as exceptionally able in the field covered by the programme in question.	3.7^{+} - 4
Credit	The student has reached a standard of performance/ attainment which is more than satisfactory but less than outstanding.	3.2^{+} - 3.7^{-}
Pass	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^{+} - 3.2^{-}
	The student has attained the 'essential minimum' required for graduation at a standard ranging from just adequate to just satisfactory.	2.0 - 2.3^{-}

9. Assessment

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

Different assessment methods including formative and summative assessments are adopted as deemed appropriate to the subjects depending on the natures of the subject disciplines and the alignment of the intend learning outcomes of the courses. The assessment methods are contained therein in the subject specifications which can be referred to at the website of the Department (www.bre.polyu.edu.hk) and are distributed to all students in the beginning of the academic year. It is also reinforced by the subject lecturers by informing the students at the commencement of semesters on the assessment modes, standards and criteria.

With the move to criterion-referenced assessment, rubrics are developed to assess student performance with a scoring scale along a task-specific continuousness of criteria for some subjects. Students work is evaluated against scoring standards/criteria. Such subjects are usually 100% continuous assessment, for example integrated projects, design projects, professional studies and individual projects. Innovations, originality, research techniques, group effort, individual contribution or work, communication and presentation skills (oral and written), independence in working and co-operation with teams can be thus assessed according to the specified criteria and intended learning outcomes of the subjects.

In general, the student performance in each subject is assessed by coursework and examination respectively. Weightings are allocated to coursework and examination of a subject, e.g. 30% and 70%, 40% and 60% or 50% and 50% respectively. Coursework includes assignments, case studies, seminar/tutorial presentation, role playing, field work, tests and other forms of learning activities. Grades will be assigned to reflect both individual contribution and group effort in the case it is not an individual piece of work. Examination is an end of unit/subject assessment. Grades are usually awarded to the written examinations. Marking schemes are provided to ensure assessment and grading on student performance are based on criteria and standards. The quality of examination papers and marking schemes is scrutinized by the external examiners and departmental academic advisor.

Other than projects and dissertation, where appropriate, some subjects can employ 100% continuous assessment. Usually students are assessed in their performance attainment of technical skills over an extended period of time, for example, measurement, estimating & documentation, and engineering surveying.

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 Capstone Project 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. Refer to the 'Guidance Notes for the Final Year Capstone Project' for details on 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.