



香港學術及職業資歷評審局
Hong Kong Council for Accreditation of
Academic & Vocational Qualifications

SUMMARY ACCREDITATION REPORT

**TECHNOLOGICAL AND HIGHER EDUCATION
INSTITUTE OF HONG KONG,
VOCATIONAL TRAINING COUNCIL**

PROGRAMME VALIDATION

**BACHELOR OF ENGINEERING (HONOURS) IN
BUILDING SERVICES ENGINEERING**

AND

**PROFESSIONAL DIPLOMA IN
PLUMBING ENGINEERING FOR BUILDING SERVICES**

JANUARY 2015

This accreditation report is issued by the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) in its capacity as the Accreditation Authority as provided for under the Accreditation of Academic and Vocational Qualifications Ordinance (Cap 592) (AAVQO). This report outlines the HKCAAVQ's determination, the validity period of the determination as well as any conditions or restrictions on the determination.

1. Introduction

- 1.1 The Technological and Higher Education Institute of Hong Kong (THEi) is a member institution of the Vocational Training Council (VTC). It offers self-financed bachelor degree and in-service training programmes. THEi was granted Institutional Review status by the HKCAAVQ in September 2012. To date, THEi offers twelve bachelor degree programmes in various disciplines.
- 1.2 The HKCAAVQ was commissioned by THEi to conduct programme validation for the proposed Bachelor of Engineering (Honours) in Building Services Engineering programme (BEng Programme) and Professional Diploma in Plumbing Engineering for Building Services programme (PD Programme) hosted by the Faculty of Science and Technology (the Faculty).
- 1.3 An on-site visit took place on 13 and 14 November 2014.

2. HKCAAVQ's Accreditation Determination

Having due consideration of the accreditation panel's observations and comments as presented in this Report, the HKCAAVQ makes the following accreditation determination:

2.1 Programme Validation

- Approval

Name of Operator	Technological and Higher Education Institute of Hong Kong, Vocational Training Council 職業訓練局 - 香港高等科技教育學院
Name of Award Granting Body	Vocational Training Council 職業訓練局

Title of Learning Programme	Bachelor of Engineering (Honours) in Building Services Engineering 屋宇設備工程（榮譽） 工學士	Professional Diploma in Plumbing Engineering for Building Services 屋宇設備與水務工程專業文憑
Title of Qualification (Exit Award)	Bachelor of Engineering (Honours) in Building Services Engineering 屋宇設備工程（榮譽） 工學士	Professional Diploma in Plumbing Engineering for Building Services 屋宇設備與水務工程專業文憑
Primary Area of Study / Training	Engineering and Technology	Engineering and Technology
Other Area of Study / Training	Not applicable	Not applicable
QF Level	Level 5	Level 5
QF Credit	528 QF credits	133 QF credits
Mode of Delivery and Programme Length	Full-time, 4 years Part-time, up to 8 years	Part-time, 20 months
Intermediate Exit Award	Title of Qualification: Higher Diploma in Building Services Engineering 屋宇設備工程高級文憑 QF Level: Level 4 QF Credits: 312 QF credits Attainment: Completion of 5 semesters in full-time mode or up to 4 years in part-time mode of the Bachelor of Engineering (Honours) in Building Services Engineering	Not applicable
Start date of Validity Period	1 September 2015	1 May 2015
End date of Validity Period	31 August 2020	30 April 2020
Number of Enrolments	One enrolment per year	One enrolment per year

Maximum Number of New Students	Year 1 Entry –33 per year (for the 2015/16 academic year) Year 1 Entry - 66 per year (from the 2016/17 to 2019/20 academic years) Year 3 Entry –33 per year (from the 2017/18 to 2019/20 academic years)	33 per year
Specification of Competency Standards Based Programme	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Address of Teaching Venue	20A Tsing Yi Road, Tsing Yi Island, New Territories	

2.1.1 Recommendations

- (a) THEi should refine the syllabuses of the *Final Year Projects* so as to show clearly the integration of design and research elements across them.
- (b) THEi should evaluate the effectiveness of the *Final Year Projects* in developing student’s research skills after the first cycle of implementation.
- (c) THEi should adjust the weighting of examination of the fundamental modules to give more emphasis on the assessment of the body of knowledge.

3. Programme Details

The following programme information is provided by the operator.

3.1 Programme Objectives

BEng Programme

- Equip students with solid fundamental knowledge of science and engineering that will prepare them for professional careers in the building services engineering industry;

- Train students with the abilities to apply theoretical engineering knowledge to professional practice and the solution of complex contemporary problems;
- Develop students with professional skills in the design, operation, testing and maintenance of building services systems and with independent problem-solving skills, as well as good communication skills, so that they can work effectively in a multi-disciplinary project;
- Strengthen students' commitment to understand the importance of ethical and societal considerations, including those related to health, safety and environmental sustainability; and
- Build up students' leadership with national and international perspectives in the professional building services engineering and with a lifelong learning attitude

PD Programme

- Equip students with solid fundamental knowledge and understanding of the theories, methods and practices of plumbing engineering that will prepare them for professional careers to perform engineering functions in the plumbing and building services industry;
- Develop students' abilities in professional practice, where a combination of engineering, management, communication, leadership and teamwork skills are required for solving engineering problems in plumbing and related building services engineering, and assume professional leadership roles;
- Nurture students' multiple perspectives and awareness on cultural, social, economic, technical and other related issues and factors influencing various plumbing, building and engineering issues; and
- Strengthen students' sense of commitment for environmental protection and sustainability by keeping abreast of the developments in the profession as well as pursuing lifelong learning.

3.2 Programme Intended Learning Outcomes

BEng Programme

- Apply knowledge of mathematics, science and engineering fundamentals to the solutions and practices of building services engineering;
- Identify, formulate and solve building services engineering problems in HVAC, electrical systems, fire detection and protection, indoor environments, energy efficiency, plumbing and drainage, building operation and maintenance, facilities management and building sustainable development;
- Design various building services systems using modern engineering and IT tools, physical, engineering analysis and appropriate green building design and industrial practices;
- Conduct investigations and devise solutions for building services problems using functional knowledge, including design of experiments, analysis and interpretation of data, and synthesis of knowledge throughout the life cycle of a building;
- Apply technical competency to solve real world engineering problems associated with the project cycle and exercise judgment through application of project management principles and skills;
- Communicate effectively about complex building services engineering activities with the profession and with society at large, and work effectively as members or leaders in professional teams; and
- Develop professional responsibilities with lifelong learning attitude and stay abreast of contemporary and international issues and be aware of the importance of safety, financial, legal, ethical and societal considerations for benefitting society in an all-round manner.

Higher Diploma in Building Services Engineering

- Apply knowledge of mathematics, science, and engineering fundamentals to well-defined building services engineering procedures and problems;

- Identify, analyse and solve routine building services engineering problems that reach building sustainability conclusions;
- Identify different approaches in carrying out building projects with an understanding of the project cycle, and the life cycle and time line of a building;
- Communicate effectively about broadly-defined activities with different stakeholders; and work individually or effectively as members or leaders in technical teams; and
- Reflect on personal learning needs and construct a personal development plan for employment and further study from learning experience gained throughout the Programme.

PD Programme

- Apply fundamental knowledge in mathematics, computing, science and engineering that underpin the study of plumbing engineering and building services engineering;
- Apply appropriate knowledge, skills and techniques to design, analyse, install, commission and maintain professional plumbing works as part of building services engineering in familiar and unfamiliar contexts;
- Conduct investigations and propose solutions to solve plumbing and building services-related problems using appropriate engineering principles to meet specific needs, taking into account practical constraints and non-routine requirements;
- Evaluate plumbing engineering and management solutions with respect to technical, financial, legal, ethical, social and other considerations;
- Integrate contemporary plumbing engineering, sustainable development concepts and knowledge of relevant fields in solving plumbing engineering problems and for career development;
- Communicate effectively in various means and modes to facilitate teamwork and completion of project works; and
- Develop professional responsibilities with a lifelong learning attitude and an ability to stay abreast of contemporary and international issues and be aware of the importance of safety,

financial, legal, ethical and societal considerations for benefiting society.

3.3 Programme Structure

BEng Programme

Module Type		Years 1 & 2 Credit Points		Years 3 & 4 Credit Points		No. of Modules	Credit Points		QF Credits
		QF-L4	QF-L5	QF-L4	QF-L5		No.	%	
General Education (GE) Modules	GE Core (English)	3	3	-	3	3	9	6.8%	36
	GE Core (Chinese)	3	-	-	3	2	6	4.6%	24
	GE Core (from 3 domains)	6	-	3	-	3	9	6.8%	36
	GE Elective	-	6	-	6	4	12	9.1%	48
Industry/ Profession Specific (IPS) Modules	Programme Core	27	21	0	39	30	87	65.9%	348
	Programme Elective Modules	-	-	-	9	3	9	6.8	36
	Work- integrated Learning	-	-	0	-	2	0	0	0
Total		69 (48%)		63 (52%)		47	132 (100%)		528

Higher Diploma in Building Services Engineering

Module Type		Years 1 & 2 Credit Points		Year 3 Credit Points		No. of Modules	Credit Points		QF Credits
		QF-L4	QF-L5	QF-L4	QF-L5		No.	%	
General Education (GE) Modules	GE Core (English)	3	3	-	-	2	6	7.7%	24
	GE Core (Chinese)	3	-	-	-	1	3	3.8%	12
	GE Core (from 3 domains)	6	-	-	-	2	6	7.7%	24
	GE Elective	-	6	-	-	2	6	7.7%	24
Industry/ Profession Specific (IPS) Modules	Programme Core	27	21	3	6	20	57	73.1%	228
	e-Learning Package	-	-	4	-	1	0	0	0
	Work- integrated Learning	-	-	-	-	1	0	0	0
Total		69 (88%)		9 (12%)		29	78 (100%)		312

PD Programme

Semester	Module Title	QF Level	Contact hrs	QF Credit
1	Electrical Services & Installation for Plumbing Engineers	4	42	12
	English for Academic Studies 1	4	42	12
	Advanced Engineering Mathematics	5	42	12
2	HVAC Technology for Plumbing Engineers	4	42	12
	Advanced Piped Services & Fire Safety Engineering	5	42	12
3	Advanced Electrical Installations	5	42	12
	Indoor Environment & HVAC Systems	5	42	12
4	Building Services System Design	5	42	12
	Commissioning & Maintenance for Building Facilities	5	42	12
5	Industry-based Student Project	5	84	25
	Professional Development	-		-
Total				133

3.4 Graduation Requirements

BEng Programme

- To obtain the bachelor degree qualification, students are required to complete 45 modules amounting to 132 credit points (CPs) and two non-credit-bearing *Work-integrated Learning (WIL)* modules: *Safety, Health & Industrial Training* and *Industrial Attachment*. For the HD qualification, students are required to complete 27 modules amounting to 78 CPs and two non-credit-bearing modules: *Safety, Health & Industrial Training* and *e-learning Package: English for Workplace Communication*.

PD Programme

- To obtain the qualification, students are required to complete ten modules amounting to 133 QF Credits and one non-credit bearing module: *Professional Development*. One QF Credit equals ten notional learning hours.

3.5 Admission Requirements

BEng Programme

- The Programme follows the General Entrance Requirements (GER) as follows:

Standard Entry Route		*Non-Standard Entry Route
Local Qualification	Non-local Qualification	
<u>HKDSE</u> Level 3 in <ul style="list-style-type: none"> • Chinese Language • English Language Level 2 in <ul style="list-style-type: none"> • Mathematics • Liberal Studies • 1 Elective Subject or an Applied Learning Subject <u>HKALE</u> Grade E in <ul style="list-style-type: none"> • AS Chinese Language & Culture/ AL Chinese Literature/Grade D in a HKCEE language other than Chinese and English, and • AS Use of English, and • 1 AL or 2 AS subjects, and • 5 HKCEE subjects, including Chinese Language and ^English Language 	<u>Mainland China</u> <ul style="list-style-type: none"> • A score above the cut-off line for admission to Mainland 2nd-tier universities in the National College Entrance Examination (全國普通高等學校統一招生考試) (NCEE) or equivalent; and • A score above 100 out of a maximum of 150 for both Chinese Language and English Language <u>Other Non-local Qualifications</u> <ul style="list-style-type: none"> • Equivalent HKDSE qualifications including Level 3 in English 	<ul style="list-style-type: none"> • To be determined by the Faculty Dean on a case-by-case basis • Students admitted through non-standard entry route will not exceed 10% of the total planned places.
Year 3 Entry <ul style="list-style-type: none"> • Hold a VTC HD in Building Services Engineering or related programmes; and • Pass an admission interview 		

* Applicants who do not meet the standard general and programme-specific entrance requirement are considered under Non-Standard Entry Route.

PD Programme

- Holders of VTC's PD in Plumbing Engineering at QF Level 4 or related HD in Building Services Engineering or Mechanical Engineering, or equivalent; or
- * Holders of PD, HD or an Associate Degree in other Engineering or Science programmes or its equivalent (on a case-by-case basis); or
- Mature applicants at the age of 23 or above with at least 5 years of relevant experiences and the Licensed Plumber status; and

- A pass in a technical aptitude test, if necessary, and an admission interview.

* Students admitted are required to study bridging modules as determined by the Programme Leader.

4. Substantial Change

- 4.1 Maintenance of the HKCAAVQ accreditation status during the validity period is subject to no substantial change being made without prior approval from the HKCAAVQ.

5. Qualifications Register

- 5.1 Qualifications accredited by the HKCAAVQ are eligible for entry into the Qualifications Register (QR) at <http://www.hkqr.gov.hk> for recognition under the Qualifications Framework (QF). The Operator should apply separately to have their quality-assured qualifications entered into the QR.

- 5.2 Only learners who are admitted to the named accredited learning programme during the validity period and who have graduated with the named qualification uploaded in the QR will be considered to have acquired a qualification recognised under the QF.

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