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Joint VPET Programme at Higher Diploma Level

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Abstract

In 2008, Vocational Training Council (VTC) collaborated with Shenzhen Polytechnic (SZPT) in the introduction of a Higher Diploma in Electrical Services Engineering. As part of the collaboration, Hong Kong Institute of Vocational Education (IVE) students spent 2 out of 6 semesters studying at SZPT, and upon graduation, they were given 2 awards from VTC and SZPT separately. In co-ordination for the graduates of the New Academic Structure in 2012, VTC revamped all Higher Diploma Programmes as 2-year, 5-semester structure. The Higher Diploma in Electrical Services Engineering course was revamped and became a stream of the Higher Diploma in Electrical Engineering programme.

This programme aims to provide students the technology, skills and related statutory requirements in the electrical services industries both in Mainland China and Hong Kong SAR. Upon graduation, graduates will be awarded with the Higher Diploma in Electrical Engineering by VTC, and also be awarded with the Higher Education Qualification Certificate (Electric Automation Technology) by SZPT.

All new intake Higher Diploma students in Electrical Engineering will study the same teaching modules in semester 1 and 2. In semester 2, students may apply for the Electrical Services (ES) Stream programme which is collaborated between the Department of Electrical Engineering, IVE (Haking Wong) and SZPT. Students who are admitted in the ES stream programme will have their study in IVE (Haking Wong) in semester 3; and then in SZPT in semester 4 and 5. During their study, students are required to attend the examination of National Occupational Certificate in Electrical Maintenance (Intermediate Level).

Keywords: *Vocational and Professional Education and Training, Dual Award, National Occupational Qualification Certificate, Registered Electrical Worker.*

Introduction

At the turn of the 90's, the electrical industry in Hong Kong has been shifting from manufacturing to service oriented industry and, from the graduate surveys in the past three years, we envisage the trend will continue because a large number of the graduates take up jobs in E&M services organizations and local large engineering projects. With rapid economic development in the Mainland China and ever-increasing interactions between the Mainland and Hong Kong, it is expected that more and more local electrical services workers will work in the Mainland, especially in Guangdong area. In response to the anticipated demand, the course is designed to enable students to grasp the technology and the statutory requirements of electrical services in both the Mainland and Hong Kong by assigning students to study at professional institutions in these two places within the two years so that students upon graduation can be well prepared to work as electrical services professionals in the Mainland as well as in Hong Kong.

VPET in Hong Kong and Mainland

Vocational and professional education and training (VPET) prepares people for future development by providing them with professional knowledge, practical skills and appropriate attitudes. For electrical engineering industry, there are specific requirements for practitioner in the trade.

In Hong Kong SAR, all workers engaged in electrical work in fixed electrical installations must be registered with the Electrical and Mechanical Services Department (EMSD). The purpose is to ensure that such work is carried out only by qualified electrical workers. Electrical work means the work in relation to the installation, commissioning, inspection, testing, maintenance, modification or repair of a low-voltage or high-voltage fixed electrical installation and includes the supervision and certification of the work and the design of the installation. Examples of fixed electrical installations are distribution boards, wiring installations and lighting fittings, etc. that are fixed in a premise.

Therefore, VTC's VPET programmes in electrical engineering was required to be accredited by EMSD so

as to meet the academic requirement of Registered Electrical Workers (REW) for the corresponding grade of electrical works.

In Mainland China, the graduates needed to pass the trade assessment before joining the workforce. For participation in the electrical industry, students are required to pass the intermediate level of the National Occupational Qualification Certificate Test (NOQ).

The Joint Programme

In 2008, VTC collaborated with SZPT to offer a dual award programme for secondary school graduates in Hong Kong SAR. The programme was offered by the Department of Electrical Engineering, IVE (Haking Wong) of VTC. The duration of the programme was three years. Since there was no linkage between the education system of Mainland China and Hong Kong SAR, students were required to attend an entrance examination organized by SZPT. The entrance examination was held in IVE (Haking Wong). The programme comprised six semesters, in which, students needed to study in IVE (Haking Wong) for four semesters and two semesters in SZPT. The generic and foundation modules would be mainly delivered by IVE (Haking Wong). SZPT was engaged in delivering vocational modules in electric automation technology whereas IVE (Haking Wong) would deliver vocational modules in power, machines and electrical installation. Upon graduation, students would be awarded with the Higher Diploma in Electrical Services Engineering (HDESE) by VTC and Higher Education Qualification Certificate (Electric Automation Technology) by SZPT.

In order to fulfil the graduation requirement of SZPT, students were required to attend the following examinations:

- Practical English Tests for Colleges (Level B)
- National Occupational Qualification Certificate in Electrical Maintenance (Intermediate level)
- Computer Office Software Applications (Intermediate level)

In 2006, the Education Bureau of Hong Kong SAR had implemented an education reform for secondary school education. One of the major reforms was to convert the 5-year secondary school structure into a 6-year secondary school structure. Under this New Academic Structure, students need to take a new public examination: The Hong Kong Diploma of Secondary Education (HKDSE). This examination serves the dual functions of an exit assessment for secondary school education as well as selection for admission to higher education.

In co-ordination for the graduate of the New Academic Structure in 2012, VTC revamped all Higher Diploma Programmes as 2-year, 5-semester structure. The Higher Diploma in Electrical Services Engineering

programme was also revamped and becomes a stream of the Higher Diploma in Electrical Engineering programme. Students who are admitted in the Higher Diploma programme of Electrical Engineering (Electrical Services stream) will have their study in Hong Kong for semesters 1, 2 and 3 and then in SZPT for semesters 4 and 5. Comparing with that of the previous 5-year secondary school structure, graduates of the new 6-year secondary school structure are exempted from the entrance examination of SZPT, Practical English Tests for Colleges (Level B) and Computer Office Software Applications (Intermediate level). However, students are still required to pass the examination of the National Occupational Qualification Certificate in Electrical Maintenance (Intermediate Level) in order to fulfil the graduation requirement of SZPT.

Upon successful completion of this joint programme, graduates will be awarded with the Higher Diploma in Electrical Engineering (Electrical Services) by VTC, and the Higher Education Qualification Certificate (Electric Automation Technology) by SZPT.

Programme Design

Vocational and Professional Education and Training, VPET, is defined as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences as well as the acquisition of practical skills, attitudes, understanding, knowledge relating to occupations in various sectors of economic and social life.

More important, the design of VPET prepares young people for lifelong learning and to be a responsible citizen.

The theme of the Higher Diploma in Electrical Engineering (Electrical Services stream) programme follows the direction of VPET, it is a balanced design of generic and vocational elements. The curriculum of this programme consists of three parts:

- Generic – it prepares students the generic skill to support their studies and further development. The content incorporates vocational English language, vocational Chinese language, mathematics, information technology and whole person development.
- Foundation – it provides students the basic science and engineering skill to support the vocational modules of “Electrical Services” stream and “Electric Automation Technology”. The content incorporates engineering science, engineering mathematics, electrical theory, electrical engineering principles, instrumentation and measurement.
- Vocational – it provides students the knowledge and skill for “Electrical Services” stream and

“Electric Automation Technology”. The content incorporates knowledge based modules and practical skill modules.

Furthermore, the students are required to carry out at least 91 hours of industrial attachment (IA) as graduation requirement. Through IA, students can have a chance to integrate the knowledge learnt in school and then apply it in the working environment which enhanced students’ future employability.

Academic and Industrial recognition is important for a VPET programme. The programme meets the corresponding recognition in Mainland China and Hong Kong SAR. In Mainland, the programme meets the National Occupational Qualification whereas in Hong Kong, the programme attains the following recognitions:

- Level 4 of the Qualification Framework by Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ);
- Academic requirement of associate member by the Hong Kong Institute of Engineers, HKIE; and
- Academic requirement of Registered Electrical Worker (Grade B), by the Electrical and Mechanical Services Department (EMSD) of Hong Kong SAR.

Programme Implementation

The programme has 347 Credits with 3475 notional learning hours including 1378 contact hours and 2056 self-study hours. Among the contact hours, 45 % is practical orientated.

The delivery of the programme follows the general two-year five-semester structure under IVE’s higher diploma programme. The corresponding study pattern/load of each semester was:

Semester	Contact Hours	Self-study Hours	Notional Learning Hours
1	299	378	685
2	312	418	740
3	234	271	510
4	273	395	680
5	260	594	860
Total	1378	2056	3475

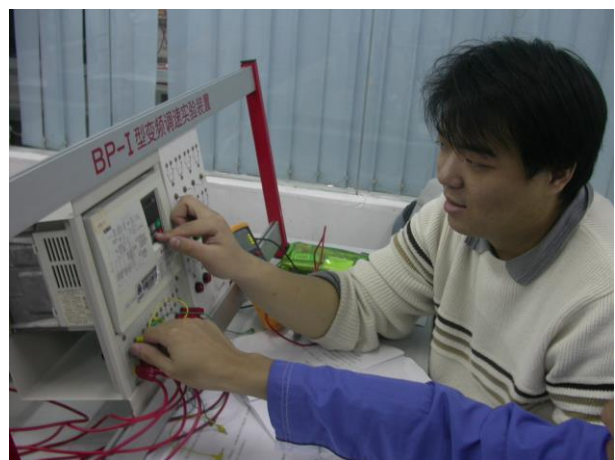
Students study the generic, foundation and “Electrical Services” stream modules in semester 1 to 3 and “Electric Automation Technology” modules in semester 4 and 5. Therefore, students would be stationed in SZPT campus in semester 4 and 5.

Snap Shot @Study

Photos of students’ practical training at various workshops:



Siemens Step 7 PLC Training in SZPT



Electrical Drive Training in SZPT



High Voltage Switchboard Training in IVE (Haking Wong)



Underground Cable Detection Training in IVE (Haking Wong)



National Occupational Qualification Certificate in Electrical Maintenance (Intermediate Level) Assessment in Progress in IVE (Haking Wong)



Electrical Installation Training in IVE (Haking Wong)



Fault Finding Training on Motor Control Panel in IVE (Haking Wong)

Conclusions

Graduates of this joint programme are able to obtain dual awards by VTC and SZPT. They are also equipped with essential vocational skills for the electrical industry both in Mainland China and Hong Kong SAR. They also gain the following extra advantages as a result of staying in SZPT for their study in semesters 4 and 5:

- become more fluent in Putonghua
- better in understanding the way of life and thinking in China
- great variety of extra-curricular activities in sports, music, volunteer services, and so on leading to better social network and enjoyable campus life
- good chance to develop better interpersonal skill in order to deal with problems possibly met in daily life and studying

Hong Kong was named the Special Administrative Region of China since July 1997, there were quite a number of programmes specially designed for business and/or law in Mainland China in Hong Kong SAR. However, the joint programme is the first one in engineering field. It is targeted to prepare graduates who are ready for work in both Mainland and Hong Kong SAR.

References

Qualification Framework, The Government of the Hong Kong Special Administrative Region, www.hkqf.gov.hk.

Hong Kong Institute of Engineers, Professional Accreditation Handbook for Engineering Higher Diploma and Equivalent Programmes, www.hkie.org.hk.

The Electrical and Mechanical Services Department, The Government of the Hong Kong Special Administrative Region, www.emsd.gov.hk.

广东省职业技能鉴定指导中心, www.gdosta.org.cn