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Research on the Construction of Curriculum System of Surveying Technology Specialty Semester in Higher Vocational Colleges

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Abstract: According to the requirements of the course of engineering measurement technology in the civil engineering professional teaching and steering committee of higher vocational colleges, combined with the characteristics of four seasons in the northern region, the preliminary research on the construction of the 2016 engineering measurement technology course system of Harbin Vocational and Technical College was carried out. Through the research on the foundations of the curriculum system, the personnel training objectives, the construction forms and the teaching mode, the talent training model and the application talent training goal which are suitable for the regional characteristics and led by the semester project are obtained, and combined with the Harbin Vocational and Technical College. The existing talent training model focuses on the cultivation of students' basic ability and innovative ability, and contributes to the regional economic development by cultivating high-level technical and skilled talents with strong foundation and strong application ability.

1. Introduction

With the rapid development of higher vocational education, the national education and teaching focus has also changed. A major shift in higher vocational education in China has shifted from basic education to multi-faceted development education, from skill education to applied education. In order to adapt to the seasonal characteristics of Heilongjiang Province and the demand for talents and skills of various enterprises, Harbin Vocational and Technical College has conducted research on the needs of enterprises and social talents, and in 2015, the engineering engineering professional engineering measurement direction was divested from the construction engineering technology specialty. , established a professional engineering measurement technology. The program currently has three current students and the total number of students is approximately 150. Since the establishment of the professional engineering measurement technology, Harbin Vocational and Technical College has done a lot of work from the aspects of talent training mode formulation, curriculum system construction, theoretical and practical course setting, teaching plan arrangement,

teacher team construction, and practice training base construction. . After three years of active exploration and practice, it has achieved good practical results. In response to the regional characteristics of Heilongjiang[1], it is proposed to create a professional engineering curriculum system in the form of a semester project to train professionals in the society to adapt to regional development.

2. Foundation of the curriculum system

The engineering measurement technology major includes the idea of “combination of work and study” in the process of constructing the curriculum system, and is guided by the “semester task”. The original intention is to decompose the learning tasks into various semesteres through the seasonal characteristics of the four seasons in the north, and integrate the engineering projects into the curriculum. The basic theoretical knowledge will be learned through engineering projects, and the two will be rationalized and combined to realize the combination of engineering and learning. The combination of work and study mainly reflects the idea of school-enterprise diversified schooling. Its foundation is the form of close-type school-enterprise cooperation. It advocates that both schools and enterprises jointly formulate and practice the concept of running a school for talents. The core is the integration of professional learning and professional practice in schools. The premise of implementation is the rationalization of professional courses within the vocational colleges[2].

3. Course system construction process

3.1. Training objectives

The engineering measurement technology specialty combines regional characteristics to explore market demand, and requires graduates to have professional basic knowledge, job occupation skills, practical employment ability and research and innovation spirit. In this regard, the major is equipped with courses such as engineering knowledge, engineering measurement and building construction technology necessary for professional basic knowledge; road and bridge engineering measurement technology, control measurement technology, cadastral survey and measurement technology, etc. Courses for engineering monitoring technology, geographic information system and surveying engineering management have been set up for practical employment. In order to cultivate students' research and innovation spirit, innovative entrepreneurship courses such as measurement scheme optimization and monitoring scheme design optimization have been set up. After systematic study of the semester project, graduates can engage in front-line work such as engineering surveying, mapping, construction and organization[3].

3.2. Direction of career

The engineering measurement technology major adopts the semester project-based curriculum system. The main graduates include construction enterprises, engineering consulting enterprises, survey and survey design enterprises, and land and resources adjustment departments. Among them, construction enterprises have the most extensive employment, including road and bridge engineering construction enterprises, construction enterprises and municipal public works construction enterprises. The main employment positions include engineering planning survey, national land survey, engineering construction, construction, supervision and other construction technical posts and construction. Management positions, the main work includes engineering planning survey and mapping, national land survey and mapping, engineering construction,

construction, supervision and measurement acceptance. The scope of employment is roughly divided into two directions, one for surveyors and the other for constructors.

(1) Surveyor. The surveyor is mainly responsible for the measurement of the transfer pile before the start of construction, the re-testing of the construction, the boundary measurement of the land in the engineering survey and planning, the measurement and control of the unit project, the measurement of the boundary of the construction land, the measurement of the boundary of the location control, and the construction of the land for the project. Land use normative legality measurement, completion and acceptance period, review and acceptance of the correctness of the land used for the project land.

(2) Construction workers. The construction workers are the technical management personnel at the grassroots level at the construction site. They are mainly responsible for the organization and command during the construction process. They also supervise the construction progress of the professional teams with the engineering and technical personnel, and assist the project manager to collect the data of the project. The custody and archiving work has an important responsibility for the progress and cost of on-site construction.

3.3. Course structure plan

The engineering survey major should focus on the basic knowledge, focus on the ability and quality, and carry out the curriculum structure and framework setting, including public courses, professional courses, professional development courses and professional training semester projects. Among them, the public courses are compulsory courses for all majors in the school, including ideological and political theory, military training, sports health, labor education, employment and entrepreneurship guidance, etc.; professional courses are based on post-professional competence core courses and professional course training; The course includes professional orientation courses and professional elective courses. The professional training semester project is a feature of the engineering measurement professional curriculum system. It mainly sets up engineering measurement cognitive projects, total station digital mapping projects, construction measurement lofting projects, and construction. Engineering and road and bridge engineering sub-project process flow production project, job skills training project, production internship project, post-internship project, graduation design project eight aspects. The four parts of the teaching materials complement each other, step by step, and gradually develop students into first-line skills with solid theoretical knowledge and strong professional skills.

4. Conclusions

In response to regional characteristics and local talent needs, Harbin Vocational and Technical College has established a curriculum system for engineering measurement technology and built a talent training model led by the semester project. After three years of implementation, it has achieved good results and continuous quality. Improve and cultivate a group of applied technical and technical talents that are urgently needed for economic development. The engineering measurement technology major will continue to explore the rationality and necessity of the semester project setting, increase the cooperation between schools and enterprises, deepen the school-enterprise joint education model, improve the professional level in a planned and step-by-step manner, and enhance students' social competitiveness.

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