On the Construction and Reformation of Water Processing Constructs Design with Information Technology

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Abstract. The course evolution and scheme of water processing constructs design were discussed in this paper. And the reformation of its didactical methods and measures also were put forward, in order to give some suggestions for culturing students of environmental engineering.

Keywords: Water processing constructs design, course construction, course reformation.

1 Course Evolution of Water Processing Constructs Design

For ordinary higher engineering college, it is important to not only training students to have relatively systematically basic theoretical knowledge, but focusing on training engineering practice ability which was students have the initial production knowledge, engineering technical ability and the concept using new technology and new methods to improve production process system. And it is very important to cultivating "heavy moral character, wide foundation, large diameter, strong ability, high quality applied and complex engineering and technical personnel and management talents [1]". Based on the above positioning, in the 1990s with engineering application talents as the goal, environmental engineering curriculum system was reformed in my college. According to knowledge structure level requirements of the course system and the laws and rules of implementation engineering tasks, the function and position of courses were determined, and the teaching contents and corresponding teaching requirements were organized, selected and reasonable arranged. With "engineering integration" concept to organize foundation and comprehensive application of curriculum, the water pollution control engineering curriculum system was divided into several modules. Then according to the module's functions, different teaching modes were put on [2]. While the course of water processing constructs design was specially set according with the principle of course modular reform. It is one of important professional course for environmental engineering (water pollution control direction), and is a important segment for deepening and practicing water pollution control engineering course elementary theory knowledge according to the cultivating requirements of water

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pollution control direction. The course of water processing constructs design is emphasized on students' engineering ability and the ability with theory practice.

The aim of water pollution control engineering is to teach students the water pollution control of engineering method, not only to make students understand the basic concepts and various process principles, but familiar with the structural types and operation control method of structures and equipments. While the water processing constructs design as the water pollution control engineering extensions, it is particular emphasized on engineering characteristics of the course. Through profound understanding and mastering various processes, the students could draw the orthodox craft construction drawings which were formed reasonable and practical with specific treatment goals and objects. So the teaching aim of the water processing construct design is to cultivate student could put into effect in engineering practice with the basic theories and basic process requirements of water disposal, and to train the student using computer drawing engineering drawings. The position of water processing constructs design is to cultivate students have engineering drawing design ability for water treatment units with computer, and its distinct feature is to training project practice ability for students.

2 Curriculum of Water Processing Constructs Design

There are 26 hours of theoretical courses, mainly lecturing ordinary structures of water treatment units and its use, as well as part of the unit operation structure requirement and equipment layout, such as aeration equipment, mixing equipment and packing, etc. To help the students understand and grasp the above content, several structures were selected priority to deeply clarify and analyze different requirements for structures and equipments of the different treatment unit, in order to inspire students' creative thinking, and design structures reasonable ability according to local conditions.

Besides theory courses, in order to strengthen students' practice ability there are practices courses which organic link with the classroom teaching. When the students have preliminary study the ordinary structural and equipment layout, drainage pipes hydraulic calculation, air piping calculation, and each part dimensions calculation of aeration pink were set to help students familiar with local structural design. And 16 hours of computer classes were also arranged. Through copying the actual water treatment structures drawings, it could enable the students to master the mapping specification and the expression means of water treatment process shop drawing, and to further grasp the structural design of water treatment unit and the method of layout construction. Students were required to find flaws of drawings specifications and modify them according to the engineering drawings criterion, which indirect improve students' engineering drawing ability.

During the period of introducing specific water treatment units, the design course was arranged. Students were required to complete a shop drawing of wastewater treatment unit in independence with typical structures processing design.This curriculum schedule could improve classroom effectively, because students could study and identify the task of course design so that they could find themselves' difficulties in the design process, then students could have class more actively with problems. The interaction processes were held in courses, so that the students could