



Construction of Information Programs based on New Engineering Goals

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Abstract Focusing on the regional economic development and the needs of strategic emerging industries, the program is student-centered and adheres to the professional construction mode of "school-enterprise cooperation and combination of production, learning and research" to cultivate high-quality applied information professionals. Through about 3 years' efforts, it will become a professional brand with distinctive features, advanced concepts, strong teachers, first-class facilities and a large number of talents. It will become a base for training applied information talents with certain influence in China, and play a demonstration and driving role for the construction and reform of information majors in the local universities of the same type.

Keywords Construction, Information programs, New engineering

1. Introduction

The comprehensive professional reform measures are as follows.

(1) Curriculum Reform

Based on the engineering education concept oriented to the goal of talent training, and with full reference to the curriculum system of Carnegie Mellon University, famous IT training institutions and information engineering industry norms, we build a "one rudder, three oars" curriculum system with application-oriented rudders and quality, theory and practice as oars. The spiral method of "promoting learning" allows students to accept the standard education of the whole process of large-scale and complex software production, and establishes the training program for middle and high-end industrial talents with solid theory, excellent technology, standardized management and high professionalism. At the same time, a number of distinctive high-quality courses and key teaching materials have been built.

(2) Reform of Human Resource Development Mechanism

Combined with the positioning and program of professional talents training, "mathematical and scientific fundamentals--programming--engineering applications--innovation and entrepreneurship" is proposed. "The four-tier competition system encourages students to progress in a gradual manner, using the four-tier competition system to enhance students' practical ability, ability to apply knowledge comprehensively and ability to work in teams. Implementing the "Excellent School Plan", establishing innovative and applied practice bases, learning from the postgraduate training model, and strengthening the research capacity and innovation of outstanding senior undergraduates through academic competitions, student science and technology innovation projects and teacher research projects. Implement the "four-step" independent and open practice teaching mode. Guided by the modern education philosophy, the mode focuses on practicality and student development, and emphasizes the formation of a positive and active learning attitude, competition and cooperation. In the practical teaching, the teaching content is task-oriented, with both "teaching" and "learning" design, as well as



independent investigation and cooperation, giving full play to the main role of students and the leading role of teachers, and stimulating students' enthusiasm for active participation.

(3) Reform of the Practical Teaching Environment

The major pays attention to the construction of the practical teaching environment and has several advanced training bases and laboratories on campus, which provide an excellent practical learning environment for the students of the major, including: the service outsourcing training base (professional foundation lab, mobile development lab and cloud computing lab), "discipline integrated lab," "New Media Technology Laboratory for Government Affairs" (under construction), etc., and has established off-campus internship bases in conjunction with a number of well-known IT companies and entrepreneurial enterprises, including the Hang Seng National Training Base.

(4) Professional Culture Development

The profession has formed the professional spirit of "innovation and excellence, openness and inclusiveness" and the humanistic feeling of "family and gratitude". Among them, the professional spirit of "innovation and excellence, openness and inclusiveness" is reflected in the following two aspects: first, to be innovative, actively explore new technologies and methods, and constantly pursue excellence; second, to be open and inclusive to share or accept new and different results or insights, especially some divergent views, to absorb and innovate, and to continuously improve the professionalism of the profession. Growing self. The humanistic sentiment of "family and gratitude" is reflected as follows: the professional has formed a teacher leading students, seniors pulling younger students, graduation help in school, everyone for professional, professional for everyone, to create a warm atmosphere and appreciate the fine tradition, let professional students study with heart, live comfortably, teachers and students friendship, let parents rest assured.

2. Talent Building

The program strives to build a high-level full-time and part-time faculty with corporate engineering experience.

(1) Talent echelon formation

The professional teachers have formed a talent ladder from Zhejiang Province master teachers, Zhejiang Province excellent teachers, young key teachers to young teachers. Each young teacher will be guided by a senior teacher after he/she joins the profession, including standardized teaching and various considerations in the teaching process to help new teachers adapt to teaching quickly.

(2) Practical engineering skills development for professional teachers

Many of the teachers in this program are double teachers or have experience in enterprises. We have invited many famous engineers and experts in the industry to conduct engineering ability training for our professional teachers. We have signed school-enterprise cooperation agreements with a number of well-known enterprises in the industry to strengthen the engineering ability training of our professional teachers.

(3) Research and teaching go hand in hand

Professional teachers pay special attention to the integration of teacher research and teaching, so that research and teaching are mutually reinforcing. Teachers' scientific research on professional knowledge provides direction and rich teaching materials for teaching; teaching further deepens the research and understanding of scientific problems. Teachers have presided over many national funds, provincial and ministerial projects, and their research and teaching achievements have been published in national and international journals, some of which have been transformed into invention patents and books with independent intellectual property rights. Many teachers have been selected or won prizes at all levels, including Zhejiang Provincial Master Teacher, Zhejiang Provincial Excellent Teacher, Zhejiang Provincial 151 Talents Training Personnel, Zhejiang Provincial Young Teacher Teaching Skills Award, and school-level young core teachers.



3. Key measures

The program is oriented towards the development of professional certification in engineering education and the professional faculty consciously establishes and applies the OBE teaching philosophy. Curriculum and teaching activities are carried out with the requirements of professional certification. On this basis, the following main measures are taken.

(1) Standardizing process-based teaching

Specialists pay close attention to the construction of teaching systems and teaching standards, and optimize the management of the teaching process. Through teaching and research activities and visits to other universities, it summarizes classroom teaching and practical teaching experience, and invites professional teachers to carefully implement process management in the preparation, teaching, approval, supplementation, examination and evaluation of all aspects of the teaching process.

(2) Enrichment of teaching methods and means

Teachers are encouraged to use innovative teaching methods such as project-based, experiential, and flipped classrooms, as well as advanced teaching methods such as micro classes to improve the quality of professional teaching. The above teaching methods and means have been widely used in the courses of this major.

(3) Establishment of various forms of monitoring mechanisms for teaching quality

In addition to the existing system of evaluating the quality of teachers' teaching and supervising teaching, the major has added the mechanism of student teaching information feedback and regular professional inspection. Throughout the semester, the major has set up several teaching inspection sessions, inviting student representatives to provide feedback on teaching information and discuss with the professional teachers in a timely manner to improve teaching quality. Also, teacher teaching quality evaluation consists of teacher self-assessment and student evaluation. Teachers are required to submit self-evaluation reports for the courses they offer.

Through the above-mentioned measures, the main role of students and the leading role of teachers have been given full play. Students have become more active in their learning, and their ability to solve practical problems has been significantly improved. Teachers have gained greater recognition for their profession and are actively participating in various teaching seminars and applying for education reform projects.

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