

The Research and Exploration on the construction of characteristic specialty of Electronic Information Engineering

Guang Yang

Changchun University of Science and Technology, Changchun 130022, China

guangyang1975@126.com

Abstract

The electronic information engineering specialty should be based on the engineering application, take cultivating innovative talents as the goal, to reform and construct for the course system and practice teaching system. the construction of characteristic specialty need to pay attention to solve the problem of setting up the specialty course, the combination of multi-level teaching, Combination of teaching and scientific research and teaching material construction.

Keywords

Electronic information engineering Specialty construction Personnel training.

1. Introduction

Electronic information engineering is an important foundation and pillar of the information industry. Electronic information engineering professional will train talented person who have modern electronic technology theory, understand information system design principle and design method, with strong computer, foreign language, the corresponding engineering technology application ability and the ability to track new theory, new knowledge, new technology, can be engaged in all kinds of electronic equipment and information systems research, design, application and development, with information acquisition, storage, transmission, processing, application, testing and control, etc..

2. To establish the School running idea that to engineering application as the background, to cultivate innovative application of advanced engineering and technical personnel for the purpose

At present, most of the science and engineering colleges and universities in China have set up the electronic information engineering specialty. Electronic information engineering professional has a wide range of knowledge, so each school is cannot has advantages in every field of electronic information engineering, but in one or several aspects of teaching scientific research strength is relatively strong, therefore, students' professional knowledge structure should be combined with the characteristics of school teaching and scientific research. electronic information engineering professional of Changchun University of Science and Technology Basing on "Electronic Science and technology", "information and Communication Engineering", with ten years of construction and development, and gradually formed a smart embedded system, the core research directions of photoelectric information processing, information extraction, processing, recognition and photoelectric information detection, with electronic technology, information processing technology, computer technology as the goal, to cultivate innovative application of advanced engineering and technical personnel as the goal, with national defense features of electronic information engineering professional.

3. Around the professional characteristics to construct the course system

Taking the training of innovative talents as the goal of the school running ideas, construct curriculum system around the professional characteristics. In the process of developing the plan, pay attention to the cultivation of students' basic theory, basic skills, innovation consciousness and innovation ability.

To achieve the integration of quality education and professional education, classroom teaching and experimental teaching, personality development and common improvement.

3.1 According to the principle of "reasonable structure of knowledge", "content and refining", to set up the professional required course.

In the organization of the curriculum content, take information acquisition, processing, transmission, storage and processing as the main line, insist the principle of the combination of basic and advanced, embody the basic and frontier and the times, timely lead teaching and research results and achievements in scientific research into teaching. According to cognitive law, balanced with the analysis and synthesis, the classical and modern, software and hardware implementation, reasonable, to allocate hours and content, truly achieve that teaching content is novel, the information is mass.

To center on the two research directions of Intelligent embedded system, optical information processing, pays attention to the curriculum construction and teaching material construction, track professional development and cutting-edge technology, To carry out academic research in this field, on the basis of this, according to the training of personnel of social goals and actual needs, to further strengthen the curriculum construction of industry characteristics: Such as photoelectric conversion technology, sensor technology, embedded information processing system

3.2 According to the professional characteristics, in accordance with the principle of "advanced technology", "advanced technology" set up an elective course.

In the professional elective courses, according to the professional characteristics, in accordance with the principle of "keeping up with the advanced technology", "master advanced technology", set up a certain period of optional courses, increase the flexibility of teaching plan, broaden the students' knowledge, flexible and professional direction.

Electronic information engineering specialty of Changchun University of Science and Technology, mainly study the basic theory and basic knowledge, learning information acquisition, signal processing, signal transmission and electronic information system design, application development and other aspects of professional knowledge, palm grasp electronic technology, computer technology, communication technology, optoelectronic technology and integrated electronic equipment and information system, basic training, has a strong innovation and application in the photoelectric information processing and intelligent embedded systems research direction.

4. Reform and construction of practical teaching system

To dilute the limits of theoretical and experimental teaching, combine theory teaching with experiment teaching, experiment teaching as an extension of theory teaching, is an important link to cultivate students' comprehensive ability.

(1) "Three ability" system construction of Experiment and practice teaching

The three skills of Basic experiment ability, comprehensive experimental ability, engineering practice ability, throughout the whole teaching process. It can train the engineering quality of students.

Basic experimental ability training: focus on training students to master the device and use of the basic instrument and the performance, basic experimental skills, basic experimental method, deepen the understanding of the relevant theory and technology.

Comprehensive experimental ability training: focus on training students' ability of design, integration, testing, process and comprehensive quality, improve the students' comprehensive ability of using the knowledge to carry on the Circuit level integrated design, development and application ability of the System level.

Engineering practice ability cultivation: focus on improving students' using the knowledge to solve practical problems, to cultivate students' Carries on the system level research and the design ability, the exploration spirit, the innovation consciousness.

(2) Reform of experiment contents

In view of that the practical ability of information curriculum is strong, the replication experiment is many, the design experiment is less. We reformed the experimental contents. Discard the Verification experiment, and the design and comprehensive experiments are designed. In the professional basic courses, professional courses, as far as possible to open the design, comprehensive experiments, and the number of the number of large, Increase design, comprehensive experiment. In the basic courses, professional courses, as far as possible to open the design, comprehensive experiments, and its number is large.

(3) Embody the idea of multi-level teaching

Experimental teaching is divided into Must-do, choose-do, constructed experiment, requires students to master Must-do experiment, need to choose part of the choose-do experiment, a few outstanding students can do constructed experiment, it is conducive to the cultivation of application ability and excellent innovative talents selection.

(4) Focus on Combination of Practicability and advanced

The teaching mode of implement the Teaching mode of gradual improvement, from the single circuit to the system. In the experiment content, Both to ensure the basic content of the experiment and to strengthen students' self-play; In circuit experiment, Both to ensure hardware implementation and to strengthen the EDA experiments; In Experiment of specialized course, pay attention to combine with actual research project, make The students get a better understanding of the knowledge and cultivate their innovation ability.

5. Improve practice base construction, strengthen the construction of professional laboratory and Practice

Optimize the allocation of resources, build a professional basic laboratory, and set up the professional direction of the laboratory in accordance with professional direction. Open manage Laboratory. Improve the practice base construction, focus on training students' practical ability and the ability to solve practical problems, encourage students to participate in scientific research work, improve students' scientific and technological innovation ability. According to the training objectives, Perfect "DSP application technology laboratory", "single chip microcomputer and Microcomputer Principle Laboratory", "embedded system laboratory". strengthen the practice of undergraduate students, encourage teachers to absorb students into the scientific research topic, construct electronic information engineering specialty laboratories, encourage teachers to develop new experimental apparatus; form laboratory opening system, updated 10% comprehensive and design experiments every year.

Continue to improve regulations of university student science and technology innovation demonstration base in Jilin Province, appoint high level of teachers to guide students to carry out innovative activities, inspire students to advocate science, innovation, and actively participate in National Undergraduate Electronic Design Contest, "Carle cup intelligent car race", "Challenge Cup technology competition", "entrepreneurship competition" and other scientific and technological innovation activity. To encourage students to participate in various competitions, to cultivate more excellent students.

6. Use the materials and handouts with special features

Teaching material is the carrier of teaching content and teaching method, it is the basic element of teaching work and teaching reform, and it is also an important basis to deepen education reform, improve teaching quality. Actively introduce key teaching materials of ordinary colleges, first select the national planning teaching materials, "for the twenty-first Century course teaching materials" and the teaching materials recommended by the committee. At the same time, to encourage teachers to compile teaching material or lecture notes according to the professional characteristics. According Discipline, professional adjustment to speed up the upgrading of teaching materials, and to maintain the teaching content of the basic, advanced and cutting-edge, to prevent the old and repetition of

teaching materials. By constructing "learning package" and other forms, form a series of teaching books and teaching software to meet the needs of diverse teaching.

7. Conclusion

Teaching reform and professional development aim to cultivate high quality talents. Make a good job of professional development planning, continue to strengthen ties with other enterprises and university, learn from each other, strengthen the weak links, and make the teaching quality to a new level. To cultivate the talents that are welcomed by the society. And characteristic construction is a system engineering, we need to continue to work hard in the future.

References

- [1] ZHANG Guo-yun, LI Wen, LI Hong-min, LIU Xiang, CHEN Song,ZHAN Teng-xi, WU Jian-hui.Exploration and Practice to Constructing Electronics and Information Engineering Characteristic Speciality, Journal of Hunan Institute of Science and Technology(Natural Sciences),vol.23(2010)No.1,p.90-92.
- [2] Jian Danping,Gui Jun.Improving Personnel Training by Building Characteristic Specialties—Specialty of Electronic and Information Engineering in Shenyang University of Technology as an Example, Journal of Wuhan University(Natural Science Edition) , vol.58(2012)No.S2,p.5-8.
- [3] Song Yue, Yang Lei.Research and practice on the reform of the teaching system for electronic information engineering professional practice, Experimental Technology and Management, vol.27(2010)No.12,p.11-13.