

Promoting the Reform and Practice of Circuit Courses in Multi - dimensionality Facing the First-class Courses

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Abstract : First-class courses are “golden courses”. To create first-class courses, you must have excellent teachers, high-quality teaching content, efficient teaching methods, perfect teaching materials and advanced teaching management. It can be seen that the construction of first-class courses has a long way to go, and the quality of course construction is closely related to teaching concepts and teaching methods. Circuit is an important basic subject for electronics majors. This article starts from the dilemma of circuit teaching in colleges and universities, and explores the reform and practical measures of circuit course for first-class courses in multi-dimensional promotion, in order to improve the current situation of circuit teaching, improve the quality of talent training, and build gold lesson classroom.

Keywords : First-class Course; Multi-dimensional; Circuit Course; Reform Practice

The construction of first-class courses aims to provide higher vocational students with higher quality teaching resources, and then comprehensively improve the quality of professional teaching courses. As the saying goes, “Teaching people to fish is not as good as teaching people to fish.” First-class courses not only teach students basic knowledge and skills, but also in-depth academic cutting-edge theories and research, so that students can find ways to acquire knowledge independently. At the same time, teachers should make extensive use of information-based teaching technology to create rich and comprehensive online teaching resources so that these digital resources can better serve teaching activities. The first-class courses should fully reflect the trinity teaching function of combining knowledge and skills, corresponding process and methods, and synergy between quality and innovation, and promote the early achievement of the goal of training high-quality, high-skilled innovative talents.

1. The current dilemma in circuit teaching

The current teaching quality of circuit courses is difficult to improve. There are three main problems in the analysis of the reasons: First, circuit courses have many teaching contents, complex concepts, abstract knowledge and theory, and high requirements for mathematical reasoning ability, and beginners are easily boring and difficult to understand. The students' orientation of the course is not clear; Second, because the research content in the study is very abstract, and the teacher cannot show and explain to the students with concrete objects, the students are often not interested, and there are phenomena of sleeping and playing with mobile phones in the classroom. If it happens, the quality of teaching is naturally unsatisfactory; Third, most teachers still use traditional blackboard writing methods to implement indoctrination teaching, and the teaching methods are old-fashioned, especially when a large amount of mathematical knowledge is used for theoretical derivation, which greatly delays classroom time and causes practical application case teaching time is not enough, students only know the methods or theorems without practical operation; Fourth, circuit courses follow the training idea of “thick foundation, wide-calibre, and heavy ability”, so that the total course learning is often reduced, and the amount of teaching information it also increases invisibly, which will inevitably increase the difficulty of learning for students.

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2. Promote the reform and practice of circuit courses in multiple dimensions for first-class courses

2.1 Strengthen the construction of teaching staff

Circuit majors in colleges and universities should clearly plan the construction of electronic professional teaching teachers, encourage teachers to study for master's and doctoral degrees on the job, and actively introduce young backbone teachers with high academic qualifications to build a highly reasonable teaching team in terms of academic qualifications, age, title and academic background; At the same time; It is necessary to strengthen the construction of teacher ethics and style, form a good teacher style in the school, cultivate a first-class teacher team with noble morality, enthusiasm for education, and love of scientific research, and actively build a good mechanism for the development of excellent teachers.

2.2 Reasonably optimize the course materials

Colleges and universities should actively compile school-based first-class circuit textbooks based on the new engineering situation and the actual needs of students, based on the principle of combining high-quality textbooks with self-compiled textbooks. Deliberately pursue the systematization and completeness of the curriculum, reasonably increase the relevance of circuit theory and engineering practice, and strive to refine the content of the teaching materials, highlight important and difficult points, clear concepts, clear methods, and practicality to ensure the cutting-edge and applicability of the teaching materials. For example, each chapter is composed of learning objectives, teaching content, chapter summary and training exercises. The teaching content of each chapter is set up with special self-test questions to promote students to think, consolidate and evaluate learning, and realize learning and practice.

2.3 Deepen the reform of teaching content and teaching methods

2.3.1 Optimize teaching content

In circuit course teaching, the selection of teaching content should follow the principles of proper retention, reasonable deletion, the basic concepts and calculation methods should be retained. At the same time, in line with the purpose of serving the goal of talent training, the teaching content must meet the needs of talent training, strengthen basic teaching, attach importance to practical application and ability training, and closely integrate case teaching and engineering practice to carry out engineering case analysis lays the foundation for follow-up professional courses and improves students' engineering practice ability.

2.3.2 Enriching teaching methods

In order to create a first-class circuit course, it is necessary to highlight the teacher-led and student-oriented teaching mode in actual teaching, and combine knowledge transfer with ability training. Teachers should make more use of enlightening and interactive teaching to guide students to take the initiative to think and form a discussion atmosphere, which can deepen their understanding of knowledge, enhance teacher-student interaction and student-student interaction in teaching, and promote students' independent learning ability the improvement. Secondly, teachers can also arrange discussion exercises to actively mobilize students' enthusiasm for learning, develop a learning habit of active thinking, and improve learning effects. In terms of teaching methods, teachers should also make more use of multimedia teaching, produce some distinctive, high-quality multimedia courseware and online teaching videos, use multimedia to improve classroom information and efficiency, and improve the intuitiveness of teaching; Combine the characteristics of the circuit course and use multimedia and blackboard teaching to effectively save manual drawing time and improve the quality and efficiency of teaching; And online teaching also creates an autonomous ubiquitous learning platform for students.

2.3.3 Implement innovative education

Incorporate innovative education in the teaching of circuit courses, and actively cultivate students' creative thinking ability. Advocate abandoning the indoctrination and closed-thinking teaching model, and devote itself to cultivating students' innovation and creativity. In the first lesson of circuit teaching, the teacher should transmit to students the awareness of the importance of creative thinking ability, so that students can clarify the knowledge system of circuit course learning, so that they can construct a clearer, complete and connected knowledge of the knowledge content they have learned. Mind consciousness. This is more conducive to the improvement of students' innovative thinking and independent learning ability.

2.3.4 Build a high-quality online teaching platform

The construction of a network teaching platform for circuit courses should be based on the integration of knowledge transfer, ability training, and comprehensive quality education to build a first-class network teaching platform to provide teachers and

students with more exemplary and radiative first-class teaching resources, including electronic teaching plans, Multimedia courseware, animation videos, exercise resource library, etc. At the same time, online courses, virtual training rooms, online test modules, etc., can provide students with conditions and opportunities for independent learning; In addition, online interactive Q&A modules can also enable teachers and students timely communication and exchange between students and students.

2.4 In-depth experimental teaching reform

To build a first-class practical teaching environment, colleges and universities should create their own demonstration laboratories for circuit courses, combine experimental teaching and theoretical teaching reform organically, build an experimental teaching system based on ability training, and strengthen curriculum integration through experimental teaching. At the same time, it actively utilizes the experimental teaching mode combining virtual and real, and introduces virtual electronic work platform to carry out virtual simulation experiments; Establishes a virtual laboratory with the help of the network, and builds a highly applicable virtual experimental site through high-quality platform software in such an experimental environment, students can carry out circuit experiments without being restricted by the limitations of components and experimental items. They can simulate and operate various circuits, observe circuit voltage, current, power, and measure various indicators, etc.

2.5 Strengthen teaching management and file construction

Electronic majors in colleges and universities should build a comprehensive teaching management mechanism, establish a course group, and determine the job responsibilities of the course leader, full-time and associate professors, and course lecturers; Set up a new course trial system, etc., further standardize the development of course teaching and research activities and attach importance to course teaching quality assessment, implementation of multi-subject teaching evaluation work; Increase the system of mutual listening and mutual evaluation among teachers; Organize random inspections of teaching plans, teaching calendars, lecture records, test paper analysis, homework review, question-and-answer guidance, teaching summary, etc., all related to teaching each semester content, and then form inspection materials, and construct teaching files to lay the foundation for continuous optimization and reform of subsequent teaching. Pay attention to the integration of the comprehensive ability of the students.

3. Conclusion

The construction of first-class courses is a long and arduous process. As universities, they should further innovate teaching concepts and thinking, persistently carry out teaching research and reforms, actively integrate modern teaching methods and advanced teaching methods, and impart professional knowledge and cultivate students' ability. In close integration, the main task of teaching is to cultivate students' ability to solve problems independently and to innovate and create. We will try our best to provide students with high-quality teachers and rich teaching resources, create first-class circuit courses, and further improve the quality of training electronic professionals.

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