

The Construction And Practice Of The First-Class Course “Digital Mapping Foundation”

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Abstract: Under the background of engineering Education certification, the course “Digital Mapping Basis”, a basic course for surveying and mapping majors, is taken as an example to carry out first-class curriculum construction. The course takes OBE (Outcome Based Education) as the teaching concept, takes students’ learning outcomes as the guidance, defines teaching objectives and ideological and political education objectives, improves teaching syllabus, and innovates teaching modes and methods. Explore effective ways to implement the construction of first-class curriculum, build student-centered and teacher-led open classrooms, and combine knowledge transfer, skill training, value guidance and education orientation.

Keywords: first-class curriculum; results-oriented education; curriculum thinking and politics

Preface

In October 2019, the Ministry of Education issued the “Implementation Opinions on the Construction of First-class Undergraduate Courses” (No. 8 of Jiao Gao (2019)), proposing to carry out the construction of first-class undergraduate courses in an all-round way, establish new concepts of curriculum construction, promote curriculum reform and innovation, implement scientific curriculum evaluation, and strict curriculum management. It is expected that after about three years, About 10,000 national and 10,000 provincial first-class undergraduate courses have been built ^[1]. Since the 2016 grade, the surveying and Mapping engineering major of Liaoning University of Science and Technology has introduced the concept of OBE into the construction of professional teaching system, emphasizing student development as the center, student learning as the center, learning effect as the center, and paying attention to the overall development of students.

1. Reconstruct the curriculum outline and clarify the teaching objectives and ideological and political education objectives

“Foundation of Digital Mapping” is a basic compulsory course for surveying and mapping majors. Since 2019, this course has promoted ideological and political content into the classroom, paid attention to the organic unity of ideological and political education and professional education, combined knowledge imparts, skills cultivation, value guidance and education orientation, and strengthened ideological and political education of college students with professional skills imparts as the carrier. The education of socialist core values will be fully implemented in teaching activities. In accordance with the OBE “output oriented” concept, the curriculum is student-centered and results-oriented. The curriculum is revised in accordance with the national standards for undergraduate professional teaching quality and engineering education professional certification standards. The curriculum keeps up with the development of the industry, continuously improves the teaching content, and emphasizes the coordinated development of knowledge, ability and quality. At the same time, with moral education as the core and “craftsman spirit” as the main line, the curriculum implements the requirements of the Ministry of Education on ideological and political curriculum construction, actively promotes the teaching reform of curriculum ideological and political education, cultivates students’ professional ethics, compliance with rules and disciplines, and strives for excellence, innovatively carries out the teaching mode of “walking ideological and political”, and realizes that professional courses and ideological and political courses are in the same direction. Construct the ideological and political pattern of “three full education”.

2. Professional teaching and ideological and political education go in the same direction to build a “big ideological and political” education pattern

Contemporary college students are the builders and successors of socialism in our country and superb craftsmen in various industries. In the construction process, the course “Digital Mapping Foundation” has dug deeply into the ideological and political elements of socialist

core values and the ideological and political connotation of “craftsman spirit”, built an ideological and political case base, and permeated every teaching link with various teaching forms and expression methods. So that the spirit of artisans in great countries can be passed on. The curriculum will integrate the ideological and political elements into the teaching content, find the ideological and political mapping and integration points related to the knowledge points of the course chapters, build the ideological and political case base, so as to achieve the teaching effect of “moral cultivation”. For example, in the second chapter of leveling, taking China’s 2020 Mount Everest elevation survey as the ideological and political entry point, teaching the important historical significance of the latest 2020 Mount Everest survey and the new technology applied, so that students can understand the Mount Everest survey Chinese surveying and mapping equipment. Scientific and technological innovation is the basis of building a modern scientific and technological power. Students are guided to clearly define their personal development orientation, closely align their own development with the development of the country, the nation and society, closely combine their future with the realization of the Chinese dream of the great rejuvenation of the Chinese nation, and realize the organic integration of educating talents and people ^[2].

3. Typical teaching examples

3.1 Information-based teaching helps the new teaching model and carries out blended teaching

Using information teaching means, the course relies on the Superstar Fanya network teaching platform to establish the “Digital Mapping Foundation” network course, and carries out the exploration and practice of online and offline mixed teaching. Online teaching is constantly enriched with online materials and learning videos, and the experimental teaching adopts the form of virtual simulation experiment to complete the experience of digital mapping and the operation of virtual imitation experiment. There are ideological and political teaching videos on the platform, which tell Chinese stories and promote the Chinese spirit, so as to help students build up cultural consciousness and self-confidence, and form socialist and communist ethics and scientific world outlook. Offline teaching takes OBE as the teaching concept, takes students as the center, takes results as the orientation, carries out the curriculum reform and practice of “promoting learning by competition”, “promoting innovation by competition” and “cultivating engineering innovation ability as the orientation”. It combines theory, practice and innovation to carry out “three-dimensional classroom” teaching. “Three-dimensional classroom” is the first classroom knowledge dimension, based on knowledge teaching, integration of curriculum ideology and politics; The second classroom practical ability dimension, focusing on practical ability training, surveying and mapping engineering open laboratory, while relying on the surveying and mapping and navigation technology association of our school to carry out the second classroom activities; The third classroom innovation ability quality dimension, in order to cultivate teamwork spirit, to improve professional quality. Emphasize the coordinated development of knowledge, ability and quality. Through the construction of “three-dimensional classroom” teaching activity mode, the establishment of classroom teaching results and training of innovative talents are closely combined.

3.2 Example of ideological and political teaching of large-scale topographic mapping course

This paper takes the knowledge unit of large scale topographic map surveying as an example to demonstrate the implementation process of blended teaching of ideological and political curriculum. The whole teaching process design is “three-dimensional classroom”, the first classroom knowledge dimension, using online and offline mixed teaching method. Pre-class online guided comprehensive application courseware, teaching videos, expanded literature materials, simulation experiments, etc., mainly students’ independent learning and teachers’ interactive question-answering; Offline teaching is mainly based on face-to-face teaching, and various teaching methods such as heuristic, case and discussion are introduced into the classroom. In terms of practical ability in the second classroom, relying on the second classroom of “Surveying and Mapping and Navigation Positioning Technology Association” of our school, the association regularly carries out surveying and mapping skills competitions with the activity purpose of “seeking knowledge, innovation, dedication, cooperation and win-win situation”. By carrying out a variety of activities, students can enhance their interest in learning, expand their professional vision, and improve their practical ability. In the process of opening the laboratory, the Mapping and Navigation positioning Technology Association has achieved

self-inheritance and self-development, and achieved a virtuous cycle. The third classroom innovation ability quality dimension, the integration of professional education and innovative education, “the third classroom” to help mapping skills competition. Relying on Liaoning Surveying and Mapping Geographic Information Star Competition and National College Students Surveying and Mapping Innovation and Entrepreneurship Intelligence Competition, the discipline competition can enhance students’ learning interest, be able to do their own role in team cooperation, complete their personal division of responsibilities, have a sense of team, promote students’ professional recognition, achieve professional identity, and improve employment and entrepreneurship ability.

4. Conclusion

This paper takes the basic course of surveying and mapping “Digital Mapping Foundation” as an example to carry out the construction of first-class courses, through clear teaching objectives and ideological and political education objectives, improve the teaching syllabus, innovate the teaching mode and method, and implement the effective way of first-class course construction. In recent years, students have achieved significant results in aspects such as professional identity, practical ability and team cooperation ability. Students’ innovative and practical ability has been comprehensively improved, and team cooperation ability has been enhanced. In provincial and national surveying and mapping skills competitions for college students, their results have been improved year by year.

References

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Fund Project:

Liaoning Province first-class curriculum construction(Project Number:20221143023)

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