

# Excavate and Apply Ideological and Political Elements on Course of Road Subgrade and Pavement Engineering

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**Abstract:** Road subgrade and pavement engineering is an important compulsory course for civil engineering and transportation majors in colleges and universities. Through the excavation and application of ideological and political elements in the course, carry out ideological and political education in the course teaching activities, we can integrate professional knowledge with ideological and political learning. It can achieve the combination of moral education and talent education, improve the effect of curriculum education.

**Keywords:** Road Subgrade and Pavement Engineering; Ideological and Political Education Integrated Throughout Curriculum; Reform in Education

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## 1. Foreword

Colleges and universities are the front position of ideological construction. It concerns national political security and regime security. It is self-evident that it is important to do well in ideological and political work in colleges and universities. General Secretary Xi attended the National Conference on Ideological and Political Work in Colleges and Universities and delivered an important speech on December 7, 2016. At the same time, the CPC Central Committee and the State Council issued the Opinions on Strengthening and Improving the Ideological and Political Work in Colleges and Universities under the New Situation. At the next stage, the direction of ideological and political work in colleges and universities has been clear, and the blueprint for development has been drawn<sup>[1]</sup>. Ideological and political work in colleges and universities should always focus on “four services”. That is, to serve the people, to serve the CPC in governing the country, to serve the consolidation and development of the socialist system with Chinese characteristics, to serve reform, opening up and socialist modernization. Persist in spreading Marxist scientific theory, cultivating and promoting socialist core values, promoting harmony and stability in colleges and universities, and cultivating excellent school spirit and style of study<sup>[2]</sup>.

## 2. Course Nature and Content

Road Subgrade and Pavement Engineering is an important compulsory course for civil engineering and transportation majors in colleges and universities. It is a highly engineering course with equal emphasis on theory and practice. The course requires students to master the technical characteristics and material requirements of subgrade, and have certain independent design and calculation ability in general and special subgrade design, subgrade drainage design, subgrade stability design and retaining wall design; requires students to master the structural characteristics and material characteristics of commonly used asphalt pavement and cement concrete pavement, and be familiar with the structural design methods of asphalt pavement and cement concrete pavement; requires students to understand the new concept, new methods and new technologies of subgrade and pavement works, as well as relevant road design specifications at home and abroad<sup>[3]</sup>. Through the study of this course, students need to constantly improve their ability to organize, summarize, understand, master and apply theoretical knowledge, cultivate the ability to continue theoretical learning, political learn-

ing and self-learning, and initially cultivate the ability to explore, analyze and solve problems, so as to lay a foundation for subsequent study and future participation in practical work.

### 3. Excavate ideological and political elements

Ideological and political education integrated throughout curriculum is based on professional courses, it is an educational activity based on the ideological and political education elements contained in various professional courses. Its essence is not to develop professional courses into ideological and political courses. It is a college curriculum system that integrates and excavates its ideological and political education elements according to the characteristics of professional courses, realizes the unity of curriculum value guidance, knowledge teaching and ability cultivation, and integrates curriculum characteristics with ideological and political elements<sup>[4]</sup>.

If ideological and political education is to be carried out through the Road Subgrade and Pavement Engineering, first of all, ideological and political education should be included in the teaching plan of the Road Subgrade and Pavement Engineering, and relevant ideological and political resources should be integrated at the preparation stage. The curriculum team refined the ideological and political elements and goals hidden in the curriculum through in-depth exploration of the curriculum (Table 1). Through the application of these ideological and political elements, educate students in core values such as legal awareness, social responsibility and professional quality in the teaching process, guide students to establish confidence in the socialist road with Chinese characteristics, theory, system and culture.

Table 1. Ideological and Political Elements and Objectives

Teaching unit	Ideological and political elements	Ideological and political objectives
Introduction	The history of road construction in China from starting to high-speed development	Strengthen students' sense of responsibility for the task of building a new era
	China's road construction achievements and super project demonstration	Enhance students' patriotism, national pride and self-confidence
	The strategy of making transportation powerful	Professional pride, social responsibility and sense of mission
Subgrade and Pavement Design; Subgrade and Pavement Construction	Design process of subgrade and pavement	Cultivate students' spirit of seeking truth from facts
	Differences between domestic and foreign highway design and construction	Guide Students to Establish "Four Correct Understandings"
	Differences between new and old design and construction specifications	Guide students to see the development of science and technology from the standard evolution, and cultivate innovative consciousness
	Quality control during design and construction; Common accident analysis	Guide students to cultivate correct professional quality and ethics

### 4. Application of Ideological and Political Elements

Teachers are the main body of ideological and political education integrated throughout curriculum, Classroom is the main channel of Ideological and political education integrated throughout curriculum. In order to effectively apply the ideological and political elements, teachers must strengthen their faith, improve themselves, and pay attention to teaching methods and effect feedback, so as to achieve the effect of collaborative education.

What knowledge is taught and what value is advocated by the teaching content has a great impact on classroom teaching. Teachers must study the three basic issues of "what to teach, whom to teach, and how to teach". From the beginning of lesson preparation, we should set up a clear teaching goal and write a curriculum syllabus that reflects the reform idea of ideological and political education integrated throughout curriculum.

Carefully prepare the teaching plan, improve the teaching plan design, and integrate "engineering cases", "character stories", and "professional norms" into the teaching content through flexible teaching models to make them play their due roles. The key and difficult issues in the course teaching content should be combined with the theoretical difficulties, social hot spots and ideological doubts encountered by students in study and life. The teaching methods of "question leading", "thematic" and "research-oriented" can be adopted. Through the teaching methods such as case introduction method, science and philosophy analogy method, and science and technology character infection method, the teaching content is closely combined with ideological and political content to deepen

the connotation construction and development of the course.

## 5. Conclusion

Road Subgrade and Pavement Engineering is an engineering course. As for the combination of engineering major with ideological and political education, we cannot blindly copy the past experience of liberal arts and science. Instead, we should formulate corresponding ideological and political policies according to the characteristics of the major and students themselves.

In the teaching process, we should carefully organize teaching materials, engineering cases, the latest norms and scientific research achievements, ideological and political elements and other teaching contents. We should also use various teaching methods and means. We should pay equal attention to theory and practice, science and ideology, improve teaching efficiency and teaching effect, so as to achieve the goal of collaborative education.

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