

# Practice and reflection on ideological and political construction of new engineering courses for mechanical undergraduate and postgraduate students

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**Abstract:** In order to cultivate responsible application-oriented technical talents in the new era, our new mechanical engineering major takes collaborative education as the ideological and political philosophy of the course, takes virtue as the goal, takes three-dimensional pluralism, explicit and implicit combination as the feature and method, insists on thinking innovation, and gradually changes the ideological and political education approach from a single ideological and political course to ideological and political course + curriculum ideological and political. From the three key elements of curriculum, teachers and teaching links to deepen the curriculum ideological and political connotation construction, from the characteristics, standards and evaluation of the three dimensions of consideration, the practice of socialist core values organically integrated into the undergraduate and postgraduate education system, fully implemented into the whole teaching process, and achieved good results.

**Key words:** mechanical majors; Curriculum thought and politics; Three full education; Curriculum reform

## Introduction

The ideological and political theory course (ideological and political course) and the ideological and political education in the course (curriculum Ideological and political course) are the ideological and political education positions that all colleges and universities must attach great importance to. The task of ideological and political course is to train successors to take on the great task of the great rejuvenation of the Chinese nation. Comparatively speaking, “Ideological and political course” as a special ideological and political education course has the characteristics of stability and systemization, and is easy to grasp. The “ideological and political course” is in addition to the ideological and political course of all other courses need to include ideological and political education elements, its wide range, connotation, curriculum miscellaneous, high requirements, difficulty, in the overall promotion of the curriculum ideological and political construction there are still many difficulties and misunderstandings, we need to spend great efforts to build the curriculum ideological and political, and jointly help the fundamental task of cultivating people.

## 1. The background and connotation of curriculum thought and politics

### 1.1 Background of curriculum ideology and politics

As early as October 2004, the Central Committee of the Communist Party of China and The State Council issued a document pointing out that every course in colleges and universities should have the function of ideological and political education, and all teachers should shoulder the social responsibility of educating people. In December 2020, Shanghai took the lead in formulating the Index System for Self-Examination of the Quality of Curriculum Ideological and Political Construction in Shanghai Colleges and Universities (Trial), which clarified the requirements for mechanism building, teachers, majors and courses, and led the national curriculum ideological and political construction. Driven by the spirit of multi-departmental meetings and documents, “Curriculum Ideology and politics” and “three-in-one education” have become an important direction of college education and teaching reform in recent years.

### 1.2 Connotation of curriculum ideology and politics

“Curriculum Thinking and Politics” aims to build a “three-all” education pattern (whole-course education, whole-course education), and all kinds of university courses and “ideological and political courses” in the same direction, forming a collaborative education effect, and “moral cultivation” as the fundamental task of college education as an all-round comprehensive education concept. The mission of “Ideological and Political Course” is to inherit the leading political culture and values, and serve to train socialist successors. The “Ideological and political Course” requires teachers to bring advanced ideological, political and moral standards advocated in today’s society into various scientific and cultural courses silently, so as to form positive guidance for students’ thoughts and cultivate new socialist people.

### 1.3 The ideological and political requirements in the training program of mechanical majors in our school

In order to implement the spirit of the National Education Conference and the National Conference on Ideological and Political Work in Colleges and Universities, in 2018, our University comprehensively revised the undergraduate and postgraduate personnel training programs and curriculum syllabi. The goal of undergraduate and postgraduate mechanical majors in our university is to enable students to meet the needs of economic and social development, develop morally, intellectually, physically, intellectually and intellectually, and become high-quality applied engineering and technical talents with good moral cultivation and professional spirit, strong sense of social responsibility, innovative consciousness, team spirit and international vision. Undergraduate graduation requirements include 12 conditions, in addition to master engineering knowledge, engineering problem analysis and scientific research ability, with the use of modern tools skills, project management ability requirements, involving the ideological and political content of graduation requirements have 7, the training program for

ideological and political education requirements are comprehensive.

## 2. Course ideological and political reform and implementation ways

In order to practice the educational concepts of comprehensive ideological and political thinking, three-dimensional ideological and political innovation, and build a big ideological and political pattern of “three-in-one education”, our school issued the “Opinions on the Implementation of Undergraduate Ideological and Political Education Teaching Reform” in 2019. The overall goal of the implementation opinions is to build values with the spirit of “two roads” and the spirit of “paving stone” as the connotation, improve the moral education awareness and ability of our teachers, and strengthen their educational responsibilities.

### 2.1 Objectives and contents of the ideological and political reform of our school curriculum

The ideological and political reform of our school’s mechanical majors focuses on socialist ideals and beliefs and the spirit of struggle in the new era, on supporting the Party and loving the country, loving the society, loving the people and loving the collective as the main line, and on national political identity, feelings for the family and ideological and moral cultivation as the focus, fully implementing socialist education with Chinese characteristics and “Chinese Dream” education. Special emphasis is placed on the education of socialist core values and excellent traditional Chinese culture, so that students should be both talented and virtuous, and be able to shoulder the great responsibility of socialist construction with Chinese characteristics and national rejuvenation.

### 2.2 Implementation strategy of ideology and politics for mechanical major courses

(1) It is necessary to realize that all kinds of courses in the university have multiple functions of imparts knowledge, elevates ability and ideological and political level. The ideological and political design of each course by the teaching teams of mechanical majors in our university is reflected in the syllabus of each course and in the ideological and political teaching cases independently planned by teachers. To this end, each course teaching team tries its best to explore the breadth and depth of professional courses, from the perspectives of the subject involved in the course, the industry of the course, the history and culture involved in the course, to add the ideological and political knowledge and humanistic color of the course, and improve the contemporary and open content of the course ideological and political content.

(2) The ideological and political reform of the curriculum is to expand the moral education function of the curriculum as far as possible, carefully extract the ideological and political elements contained in the professional curriculum, and silently integrate the ideological and political spirit into the active guidance of the professional curriculum while implanting knowledge and cultivating abilities.

(3) Grasp the principles of the implementation of curriculum ideological and political reform, to seek truth from facts, highlight key points, ingenious organic, innovative thinking, pay attention to practical results. In particular, it should be pointed out that to carry out “curriculum thinking and politics” is not simply to add ideological and political theories to various courses, nor is it to set aside a part of class hours in professional courses to teach the content of curriculum thinking and politics separately. The integration of “ideological and political” into professional courses should be a natural connection between the course content and the ideological and political elements, and it should come naturally, rather than a far-fetched, dogmytail; Not every class, every chapter should be integrated with ideological and political elements.

### 2.3 Practice of “course thinking and politics” for mechanical majors

(1) From the scope of curriculum ideological and political content construction, we should pay attention to four aspects. First, curriculum ideological and political teaching methods as diverse as possible. The second is to combine domestic and international issues and face social problems and topics of concern to students. Third, comprehensive application of resources, major events at home and abroad, lectures by well-known experts and other related content can be borrowed. Fourth, the university and local resources should be fully explored, and the university history materials and local materials should also be flexibly applied.

(2) At the practical level, curriculum ideological and political teaching should first be implemented in the curriculum ideological and political cases. The teaching cases should focus on the teaching objectives of the course, excavate the elements of education, design the teaching cases and examination questions. The specific content of the course ideological and political cases can be developed from the political civilization of various countries in the world, the rule of law of various government departments, the spiritual civilization of the people, and the ecological civilization of the society. One knowledge in the course content is associated with one ideological and political content, and multiple knowledge in a course is associated with multiple ideological and political content, thus forming a main line of ideological and political content. Multiple courses will form a number of ideological and political main lines, and multiple ideological and political main lines will form a complete ideological and political system, which will be integrated with professional curriculum theory and knowledge.

(3) Teaching case design includes the specific goal of curriculum education, case design, assessment design and teaching reflection. Case design includes education integration point, case resources, teaching methods, expected results, etc.; Teaching reflection refers to the evaluation and thinking of case content, teaching method and educating effect after the implementation of curriculum teaching, and puts forward improvement measures.

(4) At the management level, schools should improve the teaching guidance, inspection and evaluation incentive mechanism of curriculum ideology and politics. The Teaching Development Center regards the cultivation of teachers’ ideological and political ability as a key point of work, and the Teaching Affairs Office also regards the ideological and political ability of curriculum as a key content of teaching supervision and curriculum quality evaluation. At the same time, the demonstration and leading role of curriculum ideological and political

teaching is highlighted, and the construction of school-level, city-level and state-level curriculum ideological and political demonstration courses is strongly supported.

### 3. Thinking about the implementation effect of curriculum ideological and political teaching

(1) Every course in the university contains a large number of ideological and political elements, and it is the primary task of curriculum ideological and political construction to excavate the ideological and political elements contained in specialized courses.

(2) The key to curriculum ideological and political construction lies in the design of the main line and the integration level of ideological and political elements. Without reasonable ideological and political education planning and high-level ideological and political elements integration, the ideological and political function of the curriculum will be greatly reduced, and ideological and political education will become a water without a source and a tree without roots; Without a good ideological and political education function, curriculum ideological and political teaching will lose the “soul” of ideological and political education, lose the “direction”, and fail to achieve the due effect of ideological and political cooperation.

(3) The ideological and political content of the course should dig deeply into the school and the regional character’s deeds, tell the school’s story well, and stimulate the students’ learning power and motivation. Many outstanding alumni of our university have participated in the construction of century projects such as Sichuan-Tibet Highway, Qinghai-Tibet Highway, Hong Kong-Zhuhai-Macao Bridge, etc. Continuing to carry forward the spirit of the two roads is of practical significance for promoting the strategy of China’s transportation power and promoting the great rejuvenation of the Chinese nation.

(4) The ideological and political teaching reform of both undergraduate and postgraduate courses should adhere to the student-centered and effect-oriented approach to improve the learning effect of course content and ideological and political content learning, and prevent the simple and crude labeling of courses as ideological and political education, but the result is that ideological and political education has nothing to do with course content.

### 4. Epilogue

The comprehensive teaching reform of our school has brought moral education into all kinds of courses, and realized the transformation from a single ideological and political course to both ideological and political courses. The school has conducted guidance and standardization from the establishment of ideological and political teaching objectives, the exploration of ideological and political content, the standardization of teaching procedures, and the evaluation criteria of curriculum ideological and political education. The ideological and political curriculum has effectively stimulated the internal motivation of students’ study, and promoted the expansion and deepening of students’ curriculum knowledge and ideological and political accomplishment.

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