# Course Description

To whom it may concern,

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The course description below is extracted from the syllabus:

**Principle of Automatic Control**

As a main specialized basic course, Principle of Automatic Control requires the students to grasp the basic concepts, basic theories, basic analysis method and basic experiments of automatic control system, and be capable of analysis and integration of control system using time domain method, frequency domain method and root locus method, laying sound foundation for the subsequent specialized courses including Modern Control Theory, Computer Control and Intelligent Control.

**Basics of Computer Application**

This book considers the current situation of computer and information technology development, starts from training of the information literacy of vocational college students and highlight such features of teaching reform as case study and task-driven education. The cases in the book are closely related with the study, life or employment of college students, and cover Windows XP operating system, network and Internet application, Word 2003 word processor, Excel 2003 spreadsheet software, PowerPoint 2003 presentation software and other modules.

**Power Supply Technology**

This course is the specialized course for the specialty of Electrical Engineering & Its Automation. By learning this course, the students should grasp the composition of modern power supply system, properly select electrical equipment through calculation of loaded short circuit current and grasp the engineering design method of power supply and distribution, laying foundation for future work in power supply and distribution.

**Power Electronics**

This course is designed to make the students grasp the operating principles, basic features, technical parameters and drivers of all kinds of power electronic devices, grasp the operating principles, control requirements, working process, analysis method and economic and technical indexes of various electrical power transformation units made up of power electronic devices; further develop the students' ability of analyzing and solving problems, and further enhance their hands-on ability through in-class experiments, laying sound foundation for the study of subsequent courses.

Electrical Machinery & Towage

This course is the specialized basic course for the specialty of electricity. By learning this course, the students should grasp the basic knowledge of electrical machinery, towage and transformer and basic engineering capability, laying foundation for learning specialized courses and engaging in the work in electric drive in future.

**Microcomputer Control Technology**

*Microcomputer Control Technology* is the specialized course for the specialty of Electrical Engineering & Its Automation. This course is designed to allow the students to learn the control theories and advanced application technologies of microcomputer control system and understand several typical application systems of computer in industrial control. This course focuses on training the students' ability of designing and maintaining general microcomputer control system, allows the students to grasp interface techniques of common equipment of microcomputer in engineering practice, grasp the design method of digital controller of computer control system, understand the structure and development direction of distributed computer control system, laying sound foundation for the students in professional development.

**Electronic CAD Practice**

This course is a specialized practice course for the specialty of Electrical Engineering & Its Automation. This course requires the students to master the application of electronic circuit CAD software Protel 99 SE, and use Protel 99 SE software to finish the design of schematic circuit diagram and board diagram and establishment and maintenance of component library and packaging library. This course teaches the students the engineering design method of electronic circuit and CAD process.

**Building Automation**

The connotation of intelligent building technology and composition of building automation system, composition of all parts of Building Automation System(BAS) and control requirements and control techniques, control of automatic fire alarm and fire fighting linkage system, composition of security and prevention system, composition of comprehensive wiring system, communication automation system (CAS) and office automation system(OAS).

**Advanced Mathematics**

This course allows the students to further learn the basic knowledge of mathematics on the basis of senior high school mathematics. Required and elective contents: limits and continuity (including sets and functions), derivative and differential; mean value theorem and application of derivative; indefinite integral; definite integral; application of definite integral; linear algebra, probability & statistics. Mathematics is designed to improve the students' mathematics literacy, develop their abilities of basic operation, use of basic calculation tools, space imagination, symbolic-graphic combination, thinking and simple practice, laying foundation for the study of specialized courses.

**Fundamentals of Electric and Electronic Engineering**

This course focuses on teaching the fundamental principle and law of electric and magnetic circuits, introduces certain basic knowledge of electric and magnetic fields, allows the students to master the fundamental law and fundamental theorem of circuit, basic analysis method of DC and AC circuits and first-order dynamic circuit and its analysis method; understand the fundamental theorems of electric and magnetic fields; understand the concepts of non-sinusoidal periodic AC and second-order dynamic circuit.

**Mechanical Drawing**

By learning this course, the students can correctly use common drawing tools, learn to execute relevant national technical standards and specifications, grasp the fundamental principle of orthography and drawing of three-view drawing and axonometric drawing, grasp standard parts, common parts, size, tolerance and fits, roughness and relevant mechanical knowledge, acquire the ability of surveying and drawing general part drawing and reading assembly drawing, acquire certain ability of space thinking and develop the attitude of conscientiousness and sense of responsibility and style of meticulousness in work.

**Programmable Logic Controller (PLC)**

Understand the composition and basic operation principle of small programmable logic controller, grasp programming instructions and programming approaches, acquire the ability of using computer software for programming, debugging and monitoring, acquire the ability of reading programmable logic controller program and designing general control programs of programmable logic controller control.

**Sensors & Testing Technology**

Understand the working principle of sensors, get familiar with the external characteristics of typical pressure, temperature and photoelectric sensor, acquire the ability of looking up table for selection according to the requirements of use, grasp the measuring method of several common physical quantities (e.g. length, speed, pressure, temperature, magnetic field, etc), learn how to analyze the application circuit of typical sensors.

**Single Chip Microcomputer**

This course requires the students to grasp the structure and principle of single chip microcomputer, establish correct global concept of microcomputer system, understand the dialectical relationship between software and hardware, grasp the structure and working principle of CPU and basic interface, learn how to determine the software and hardware structure of system, especially real-time system, according to specific requirements in particular, properly select memory unit and interface chip, and know how to apply it to practical production.



**C Language Programming**

This course is designed to enable the students to systematically grasp the design method of concise application and acquire the ability of writing the program solving

some practical problems, laying foundation for learning other computer courses in future. This course features combination of theory and practice. It requires the students to actively make hands-on exercises while learning theoretical knowledge for the purpose of proficient and concise application of theoretical knowledge.

**Cultivation of Ethics and Fundamentals of Law**

Cultivation of Ethics and Fundamentals of Law is the required course of "Ideological and Political Theory course". This course is designed to give scientific and convincing answers to the practical issues facing and concerning contemporary university students by applying Marxist standpoints, views and methods, disseminating correct view of talent, values, moral outlook and outlook of legal system based on combination of theory and practice, so as to help university students firmly establish the socialistic view of honor and shame exemplified by "Eight Honors and Eight Shames", develop sound ideological and ethical quality and law consciousness , address the practical issues facing university students in growth and development, making them qualified and reliable well-developed builder and successor of socialist cause.

**Specialized English for Electrical Automation**

Specialized English for Electrical Automation is designed to develop and improve the students' ability of reading, writing, listening, speaking and translating specialized English literature (e.g. the specialized English literature encountered in graduate entrance reexamination, job interview, reading and translation practice), and plays an important role in the students' development in some specialty.

**College English**

English specialty focuses on the training of English language foundation and practical competence in using the language, emphasizes the solid construction of academic foundation of English Language and Literature, skills in Foreign Trade English and teaching practice, so as to enhances the students' employability and adaptability, carry forward the professional advantage of science and engineering universities, train knowledgeable, high-quality and innovative versatile high-potential English talents.

**College Physics**

Physics is the science studying the basic structure, the most fundamental and general forms of motion and the law of interaction and mutual transformation of mass in nature. Engineering Physics offers a basic introduction and presents to the students basic knowledge and research methods in this filed, including the basic contents of mechanics, thermology, optics, electromagnetics and modern physics. It serves as the key and way for people to learn about the nature, understand the nature, and develop correct world view, logic thinking ability and practical application ability.