

<<机械设计>>

图书基本信息

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前言

Machinery Design is an important technological basic course in mechanical engineering education. It aims to develop engineering students competence of machine design that is the primary concern of machinery manufacturing and the key to manufacturing good products. This course is required to provide engineering students——future engineers——with an elementary knowledge of machine design, to teach them the method, procedures and calculation of machine design, to train them in dealing with practical issues such as simplifying configurations of mechanical elements, establishing models of mathematics and physics, selecting materials, processes and heat-treatments, understanding inspection and maintenance of machinery. Machinery Design is a compulsory course for all the engineering students. As teachers of this course, we believe that it is of urgent necessity for us to compile an English textbook of Machinery Design in accordance with the basic teaching requirements for this course set up by National Education Ministry in order to enhance bilingual teaching in Chinas universities of science and technology. Textbooks of Machinery Design popular in American or European universities are, of course, our main source of reference. But they can only serve as reference because the authors of those textbooks have a thinking pattern different from ours and the machinery manufacturing environments of those countries are different from ours, too. We have established three principles for compiling this textbook :

(1) to meet the needs of the Chinese engineering students ; (2) to take in the essence of the similar textbooks compiled by American and European professors ; (3) in plain and concise English. Meanwhile, we have not only introduced in it the advanced ideas and methods of machine design, but also refreshed the teaching contents with the focus shifted on developing the students competence of mechanical engineering design. Besides, we have emphasized creative design and the cultivation of the students ability for analysis and synthesis. In a word, our English textbook of Machinery Design is intended to satisfy the teaching requirements for this course, to develop the English competence of engineering students, and to help them to meet the challenge of economic globalization and technical and scientific revolution.

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内容概要

Machinery Design is an important technological basic course in mechanical engineering education. This English textbook of Machinery Design is written for Chinese students majoring in mechanical engineering in accordance with the basic teaching requirements for this course set up by National Education Ministry and to enhance bilingual teaching in China's universities of science and technology. It is designed to satisfy the teaching requirements for this course, to develop the English competence of the students, and to help them to meet the challenge of economic globalization and technical and scientific revolution. There are 19 chapters in this textbook: Introduction, Principles of Machinery Design, Failure Theories and Material strength, Friction, Wear and Lubrication, Design of Threaded Fasteners and Joints, Design of Keys, Splines and Pins, Design of Riveted, Welded and Bonded Joints, Transmission of Belts, Transmission of Chains, Design of Gears, Design of Worm Gearing, Sliding Bearings, Rolling-Contact Bearings, Couplings and Clutches, Shafts, Springs, Housings and Frames of Machines, Reducer, and Projects of Machinery Design. At the end of each chapter some problems and notes are designed for practice and better understanding. This textbook can be used as textbook for teachers and students of mechanical engineering for the course of Machinery Design, and as reference book for teachers, students and engineers of other relevant engineering areas.

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