

<<土木工程专业英语>>

图书基本信息

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### 前言

本教材是专门为高等院校土木工程专业建筑工程方向学生学习专业英语而编写的，提供了集听、写、读于一体的综合训练模式，以全面提高土木工程专业学生专业英语的阅读、写作能力和听力水平。

本教材阅读和写作部分共分10章，共36篇，涵盖了结构力学、土木工程材料、结构设计基本概念、钢筋混凝土基本构件、钢结构、多层及高层建筑结构抗震设计、砌体结构、组合结构、地基与基础、建筑施工组织与管理10个方面的基本概念和原理。

每一课包括文章阅读、生词与词组注解及科技写作指南。

写作部分分类讲解了土木工程期刊论文标题、摘要、前言、方法、结果和讨论部分的写法；提供了描述图表、尺寸、材料性质、比较、定义、分类、范围的典型例句，供学生仿写；总结了学生进行土木工程论文写作常犯的语法错误；最后归纳了描述结构设计所常用的句子，供学生写毕业论文时参考。

本教材听力部分（附光盘）以结构抗震为主题，包含20篇短文，介绍了结构抗震的基本概念。每篇短文均模拟英语课堂，学生可以边看边听，在学到专业知识的同时提高专业英语听力水平，为参加国际间学术交流等奠定良好的基础。

本书的第2章到第9章及听力部分覆盖了大学本科建筑结构专业课的全部知识要点，以《建筑结构荷载规范》（GB 5009-2001）、《混凝土结构设计规范》（GB 50010-2002）、《建筑结构抗震设计规范》（GB 50011-2001）、《砌体结构设计规范》（GB 50003-2001）、《钢结构设计规范》（GB 50017-2003）和《建筑地基基础设计规范》（GB 50007-2002）为编写依据，力求讲解系统、概念清晰、条理明确。

本书既可以作为建筑学工程管理专业学习建筑结构课程的双语教材，也可作为广大从事建筑工程专业、工程管理专业工程技术人员撰写英语论文的有益参考书。

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### 内容概要

本教材是专门为高等学校土木工程专业建筑工程方向学生学习专业英语而编写的，本书通过集听、写、读于一体的综合训练模式，提高学生的专业英语水平。

本书包括36篇文章的阅读、写作练习和随书光盘的20篇短文的听力练习共三大部分。

内容涵盖了结构力学、土木工程材料、结构设计、钢筋混凝土基本结构、钢结构、多层及高层建筑结构抗震设计、砌体结构、组合结构、地基与基础、建筑施工组织与管理等方面英语文章阅读、词汇学习和科技论文写作指南。

本书适用于土木工程专业的本科生和研究生学习专业英语，也可作为土木工程领域的工程技术人员学习参考书。

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## 章节摘录

2. Structural Stability      A fundamental consideration in designing a structure is that of assuring its stability under any type of possible loading condition. All structures undergo some shape changes under load. In a stable structure the deformations induced by the load are typically small, and internal forces are generated in the structure by the action of the load tend to restore the structure to its original shape after the load has been removed. In an unstable structure, the deformations induced by a load are typically massive and often tend to continue increasing as long as the load is applied. An unstable structure does not generate internal forces that tend to restore the structure to its original configuration. Unstable structures quite often collapse completely and instantaneously as a load is applied to them. It is the fundamental responsibility of the structural designer to assure that a proposed structure does indeed form a stable configuration.      Stability is a crucial issue in the design of structures that are assemblies of discrete elements. For example, the post-and-beam structure illustrated in Figure 1. 2a is apparently stable. Any horizontal force, however, tends to cause deformations of the type indicated in Figure 1.2b. Clearly, the structure has no capacity to resist horizontal load, nor does it have any mechanism that tends to restore it to its initial shape after the horizontal load is removed. The large changes in angle that occur between members characterize an unstable structure that is beginning to collapse. This particular structure will collapse almost instantaneously under load. Consequently, this particular pattern of members is referred to as a collapse mechanism.

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