

<<土木工程专业英语>>

图书基本信息

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前言

教育可理解为教书与育人。

所谓教书，不外乎是教给学生科学知识、技术方法和运作技能等，教学生以安身之本。

所谓育人，则要教给学生做人道理，提升学生的人文素质和科学精神，教学生以立命之本。

我们教育工作者应该从中华民族振兴的历史使命出发，来从事教书与育人工作。

作为教育本源之一的教材，必然要承载教书和育人的双重责任，体现两者的高度结合。

中国经济建设高速持续发展，国家对各类建筑人才需求日增，对高校土建类高素质人才培养提出了新的要求，从而对土建类教材建设也提出了新的要求。

这套教材正是为了适应当今时代对高层次建设人才培养的需求而编写的。

一部好的教材应该把人文素质和科学精神的培养放在重要位置。

教材中不仅要从内容上体现人文素质教育和科学精神教育，而且还要从科学严谨性、法规权威性、工程技术创新性来启发和促进学生科学世界观的形成。

简而言之，这套教材有以下特点。

一方面，从指导思想来讲，这套教材注意到“六个面向”，即面向社会需求、面向建筑实践、面向人才市场、面向教学改革、面向学生现状、面向新兴技术。

二方面，教材编写体系有所创新。

结合具有土建类学科特色的教学理论、教学方法和教学模式，这套教材进行了许多新的教学方式的探索，如引入案例式教学、研讨式教学等。

三方面，这套教材适应现在教学改革发展的要求，提倡所谓“宽口径、少学时”的人才培养模式。

在教学体系、教材编写内容和数量等方面也做了相应改变，而且教学起点也可随着学生水平做相应调整。

同时，在这套教材编写中，特别重视人才的能力培养和基本技能培养，适应土建专业特别强调实践性的要求。

我们希望这套教材能有助于培养适应社会发展需要的、素质全面的新型工程建设人才。

我们也相信这套教材能达到这个目标，从形式到内容都成为精品，为教师和学生，以及专业人士所喜爱。

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内容概要

全书共有30课，分为建筑与结构力学，建筑与管理工程、桥梁和道路工程、地基基础、港口工程等几个部分。

每课由正文、词汇与词组、注释、课后习题和课后阅读材料等组成，有助于读者掌握和巩固各方向专业英语词汇和表达技巧。

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章节摘录

Force method of analysis is one of the basic methods of analysis of structures. It is proposed to outline the primary procedure in this paper.

Description of method

First of all, the degree of static indeterminacy is determined. A number of releases equal to the degree of indeterminacy is now introduced, each release being made by the removal of an external or an internal force. The releases must be chosen so that the remaining structure is stable and statically determinate. However in some cases the number of releases can be less than the degree of indeterminacy, provided the remaining statically indeterminate structure is so simple that it can be readily analyzed. In all cases, the released forces, which are also called redundant forces, should be carefully chosen so that the released structure is easy to analyze.

The releases introduce inconsistencies in displacements, and as a second step these inconsistencies or "errors" in the released structure are determined. In other words, we calculate the magnitude of the "errors" in the displacements corresponding to the redundant forces. These displacements may be due to external applied loads, settlement of supports, or temperature variation.

The third step consists of a determination of the displacements in the released structure due to unit values of the redundants (cf. Figs.8-1 d and e). These displacements are required at the same location and in the same direction as the error in displacements determined in step 2.

The values of the redundant forces necessary to eliminate the errors in the displacements are now determined. This requires the writing of superposition equations in which the effects of the separate redundants are added to the displacements of the released structure.

Hence, we find the forces on the original indeterminate structure : they are the sum of the correction forces (redundants) and forces on the released structure.

This brief description of the application of the force method will now be illustrated by an example.

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