

Indeterminate Structural Analysis

The present book is an attempt to explain the basics of indeterminate structural analysis. It been designed to cater to the needs of the undergraduate students and design engineers. The classical methods viz., slope deflection, moment distribution and Kani's method have been explained in the beginning which form the basis of analysis, followed by the flexibility method and stiffness method using system approach. The introduction of system stiffness approach in a systematic manner makes the student develop an interest in analyzing the complex structures using direct stiffness approach later. The approximate method of analysis of multistorey frames subjected to lateral loads and vertical loads is presented herewith. The approximate analysis includes the portal method, cantilever methods and factor method for lateral loads. Multistorey frames subjected to vertical loads have also been analyzed using the point of inflexion method and substitute frame method. Analyses of two hinged arches and introduction to structural dynamics have also been added.

A number of graded illustrative examples are presented which would make the student understand and appreciate the subject in depth. We hope that this book will lay firm foundation for the design subjects, viz., design of reinforced concrete, prestressed concrete and steel structures.

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