Record Nr.	UNINA9910462805803321
Autore	Fares Nabil
Titolo	Practical approximate analysis of beams and frames [[electronic resource] /] / Nabil Fares
Pubbl/distr/stampa	Reston, : American Society of Civil Engineers, 2012
ISBN	0-7844-7685-3
Descrizione fisica	1 online resource (391 p.)
Collana	Lecture notes in mechanics ; ; 1
Disciplina	624.1/7723
Soggetti	Girders Flanges Structural frames Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	 ""Cover""; ""Contents"; ""Preface""; ""1 Approximate Analysis of Beams and Frames with no Sidesway"; ""1.1 Introduction to Sketching"; ""1.2 Passive Members in Continuous Beams and Frames"; ""1.3 Beam with a Moment Applied at One End and Resisting at the Other"; ""1.3 Beam with a Moment Applied at One End and Resisting at the Other"; ""1.4 Example: Continuous Beam with Moment Applied at Only One Node"; ""1.5 Outline of Approximate Method for Analyzing Structures with No Sidesway"; ""1.6 Beam with a Uniform Load"; ""1.7 Example: Uniform Load"; ""1.8 Beam with a Point Force"; ""1.9 Example: Point Force"; ""1.10 Comments and Examples on Multiple Loads"" ""1.11 Beam with Two or More Internal Hinges"""1.12 Beam with One Internal Hinge, a Moment Applied at One End and Resisting at the Other"; ""1.13 Beam with One Internal Hinge and a Uniform Load"; ""2.4 Approximate Analysis of Frames with Sidesway"; ""2.3 Sketching Single Floor Portal Frames"; ""2.4 The Column with Rotary Springs and Moments at Both Ends"" ""2.5 Approximate Analysis of Multiple Floor Frames Subject to Horizontal Loads": ""2.7 Sketching Multiple Floor Frames Subject to Horizontal

1.

Loads""; ""2.8 Notes on Sidesway Due to Vertical Loads or Applied Couples""; ""3 Estimating Displacements in Beams and Frames"": ""3.1 Maximum Vertical Displacements in Beams""; ""3.2 Estimating Moment of Inertia""; ""3.3 Relative Vertical Displacements versus Strain in Beams""; ""3.4 Side Displacements of Frames Subject to Side Loads"" "3.5 Obtaining Rotary Stiffness Factors from Slope Measurements in Beams"""4 Approximate Influence Lines for Indeterminate Beams""; ""4.1 Introduction to Influence Lines""; ""4.2 Exact Influence Lines for Statically Determinate Beams""; ""4.3 Approximate Influence Lines for Statically Indeterminate Structures""; ""Appendixes""; ""A: Beamsa€? End-Moments and Inflection Points"; ""A.1 Moment End-Loaded Beam""; ""A.2 Uniformly Distributed Load""; ""A.3 Point Force""; ""B: Columna€?Shear Stiffness, End-Moments and Inflection Points""; ""B.1 Cantilever""; ""B.2 Column for Single Story Building"" ""B.3 Column for MultiStory Buildinga€?First Floor""""B.4 Column for MultiStory Buildinga€?Top Floor (Top and Bottom Beams Similar)""; ""B.5 Column for MultiStory Buildinga€?General Case""; ""C: Beamsa€? Deflections and Rotations"; "C.1 Displacements at Any Location": "C. 2 Rotations at Any Location""; ""C.3 Uniform Loada€?Mid Displacements""; ""C.4 Point Forcea€?Centrally Loadeda€?Mid Displacements""; ""C.5 Point forcea€?Loaded Anywherea€?Mid Displacements""; ""C.6 Point Momenta€?Loaded Anywherea€?Mid Displacements""; ""C.7 Cantilevera€?Various Special Casesa€? Displacements" ""D: Useful Results for Influence Lines""