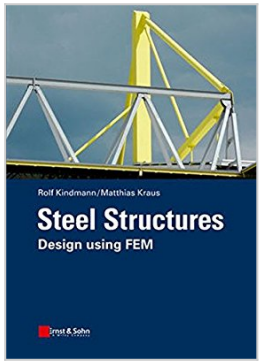

Steel Structures: Design using FEM

By Rolf Kindmann, Matthias Kraus

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus

This book presents the design of steel structures using finite element methods (FEM) according to the current state of the art in Germany and the rest of Europe. After a short introduction on the basics of the design, this book illustrates the FEM with a focus on internal forces, displacements, critical loads and modal shapes. Next to finite element procedures for linear calculations considering the stress states of normal force, biaxial bending and warping torsion, non-linear calculations and the stability cases of flexural buckling, lateral torsional buckling and plate buckling are concentrated on significantly. In this context, design procedures for stability according to the standard Eurocode 3 is introduced and discussed. In addition, important fundamental issues are covered, such as the determination of cross-section properties as well as the elastic and plastic cross-section resistance. Complementary, finite element procedures for cross sections are dealt with, which will have an increasing importance in future. This book has evolved within the teaching activities of the authors in the lecture Computer-oriented Design of Steel Structures on the Master?s Program Computational Engineering at the University of Bochum. It covers the total variety of demands needed to be discussed for the safe, economic and modern design of steel structures.

Steel Structures: Design using FEM

By Rolf Kindmann, Matthias Kraus

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus

This book presents the design of steel structures using finite element methods (FEM) according to the current state of the art in Germany and the rest of Europe. After a short introduction on the basics of the design, this book illustrates the FEM with a focus on internal forces, displacements, critical loads and modal shapes. Next to finite element procedures for linear calculations considering the stress states of normal force, biaxial bending and warping torsion, non-linear calculations and the stability cases of flexural buckling, lateral torsional buckling and plate buckling are concentrated on significantly. In this context, design procedures for stability according to the standard Eurocode 3 is introduced and discussed. In addition, important fundamental issues are covered, such as the determination of cross-section properties as well as the elastic and plastic cross-section resistance. Complementary, finite element procedures for cross sections are dealt with, which will have an increasing importance in future.
This book has evolved within the teaching activities of the authors in the lecture Computer-oriented Design of Steel Structures on the Master?s Program Computational Engineering at the University of Bochum. It covers the total variety of demands needed to be discussed for the safe, economic and modern design of steel structures.

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus Bibliography

- Sales Rank: #2849802 in Books
- Published on: 2011-05-31
- Original language: English
- Number of items: 1
- Dimensions: 9.50" h x 1.10" w x 6.70" l, 2.30 pounds
- Binding: Paperback
- 552 pages

Editorial Review

From the Back Cover
This book presents the design of steel structures using finite element methods (FEM) according to the current state of the art in Germany and the rest of Europe. After a short introduction on the basics of the design, this book illustrates the FEM with a focus on internal forces, displacements, critical loads and modal shapes. Next to finite element procedures for linear calculations considering the stress states of normal force, biaxial bending and warping torsion, non-linear calculations and the stability cases of flexural buckling, lateral torsional buckling and plate buckling are concentrated on significantly. In this context, design procedures for stability according to the standards DIN 18800 and Eurocode 3 are introduced and discussed. In addition, important fundamental issues are covered, such as the determination of cross-section properties as well as the elastic and plastic cross-section resistance. Complementary, finite element procedures for cross sections are dealt with, which will have an increasing importance in the future.

This book has evolved within the teaching activities of the authors in the lecture “Computer-oriented Design of Steel Structures” on the Masters’ Programme “Computational Engineering” at the University of Bochum. It covers the total variety of demands needed to be discussed for the safe, economic and modern design of steel structures.

About the Author
University Professor Dr.-Ing. Rolf Kindmann studied civil engineering at the University of Bochum. Between 1974 and 1989 he worked at the university for six years as a researcher and then for ten years at Thyssen Engineering in different positions, lastly as division manager of all engineering departments. From 1990 to 2013 he was a full professor and the head if the Institute of Steel and Composite Structures at the University of Bochum. In 1991 he founded Sch?rmann - Kindmann and partners, Consulting Engineers (SKP) in Dortmund. Professor Dr. Kindmann is a licensed checking engineer for steel and concrete structures and of design in railway engieneering.
Dr.-Ing. Matthias Kraus studied civil engineering at the Technical University of Darmstadt. In 2001 he changed to the University of Bochum as researcher, where he received his doctoral degree in 2005 and then worked as chief engineer at the Institute of Steel and Composite Structures. Since 2010 Dr. Kraus has worked at Sch?rmann - Kindmann and Partners, Dortmund, as chief engineer. He also has adjunct lecturships at the University of Bochum.

Users Review

From reader reviews:

Stephen Williams:

This Steel Structures: Design using FEM book is just not ordinary book, you have after that it the world is in your hands. The benefit you will get by reading this book is usually information inside this book incredible fresh, you will get facts which is getting deeper you read a lot of information you will get. This kind of Steel Structures: Design using FEM without we comprehend teach the one who examining it become critical in imagining and analyzing. Don't become worry Steel Structures: Design using FEM can bring if you are and not make your case space or bookshelves' come to be full because you can have it with your lovely laptop even mobile phone. This Steel Structures: Design using FEM having good arrangement in word and layout,

so you will not sense uninterested in reading.

Tara Thornton:

The particular book Steel Structures: Design using FEM will bring someone to the new experience of reading a book. The author style to spell out the idea is very unique. In the event you try to find new book to read, this book very ideal to you. The book Steel Structures: Design using FEM is much recommended to you to learn. You can also get the e-book from the official web site, so you can quicker to read the book.

Cynthia Gomez:

The book untitled Steel Structures: Design using FEM contain a lot of information on it. The writer explains your girlfriend idea with easy way. The language is very straightforward all the people, so do not necessarily worry, you can easy to read the idea. The book was published by famous author. The author will take you in the new period of literary works. It is easy to read this book because you can keep reading your smart phone, or product, so you can read the book with anywhere and anytime. If you want to buy the e-book, you can wide open their official web-site in addition to order it. Have a nice study.

Robert Marshall:

You could spend your free time you just read this book this guide. This Steel Structures: Design using FEM is simple to deliver you can read it in the recreation area, in the beach, train as well as soon. If you did not include much space to bring often the printed book, you can buy the actual e-book. It is make you easier to read it. You can save the actual book in your smart phone. Consequently there are a lot of benefits that you will get when one buys this book.

Read Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus for online ebook

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus books to read online.

Online Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus ebook PDF download

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus Doc

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus Mobipocket

Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus EPub

X0PFH5KL9VT: Steel Structures: Design using FEM By Rolf Kindmann, Matthias Kraus