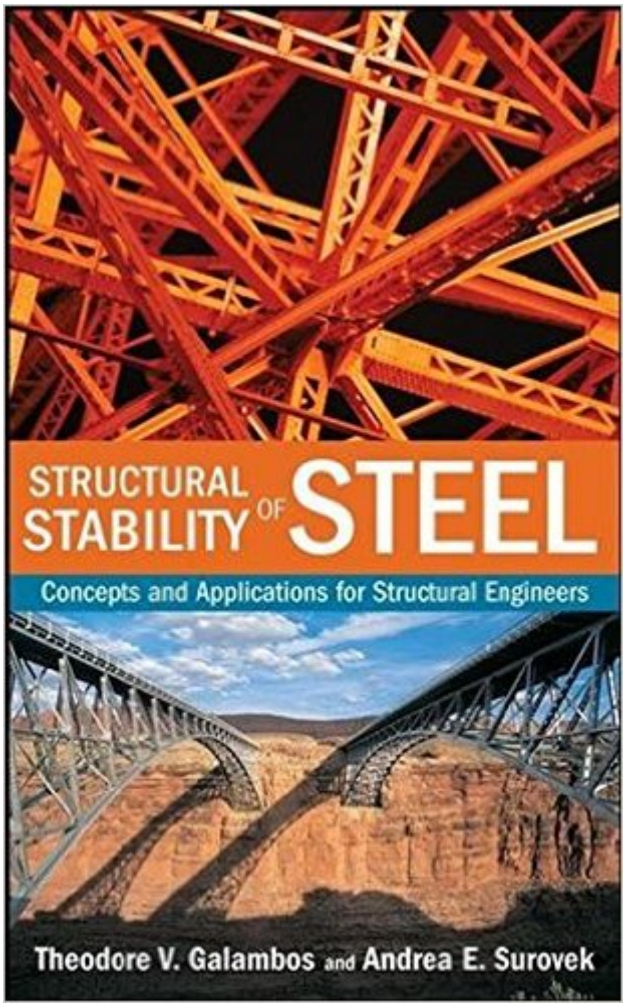
Structural Stability Of Steel: Concepts And Applications For Structural Engineers



Synopsis

Practical guide to structural stability theory for the design of safe steel structures Not only does this book provide readers with a solid foundation in structural stability theory, it also offers them a practical, working knowledge of how this theory translates into design specifications for safe steel structures. Structural Stability of Steel features detailed discussions of the elastic and inelastic stability of steel columns, beams, beam-columns, and frames alongside numerous worked examples. For each type of structural member or system, the authors set forth recommended design rules with clear explanations of how they were derived. Following an introduction to the principles of stability theory, the book covers: * Stability of axially loaded planar elastic systems * Tangent-modulus, reduced-modulus, and maximum strength theories * Elastic and inelastic stability limits of planar beam-columns * Elastic and inelastic instability of planar frames * Out-of-plane, lateral-torsional buckling of beams, columns, and beam-columns The final two chapters focus on the application of stability theory to the practical design of steel structures, with special emphasis on examples based on the 2005 Specification for Structural Steel Buildings of the American Institute of Steel Construction. Problem sets at the end of each chapter enable readers to put their newfound knowledge into practice by solving actual instability problems. With its clear logical progression from theory to design implementation, this book is an ideal textbook for upper-level undergraduates and graduate students in structural engineering. Practicing engineers should also turn to this book for expert assistance in investigating and solving a myriad of stability problems.

Book Information

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Customer Reviews

I had a graduate course in buckling that covered the material in this book. It would have been nice to have this as a textbook for that course. It clearly explains where many of the formulas in the AISC code come from. (e.g. alignment charts) A few cautionary notes: a lot of mathematical details are left out; the reader will have to fill them in. A very strong background in structural engineering is required to understand this book.The last half of the book is not as good as the first half because there's only a summary of AISC procedures. There's less theoretical development towards the end of the book.Finally, I take exception to some of the terminology used in some places in this book. (e.g. not making a clear distinction between deflection and deformation) The authors are a bit sloppy at that and its quite inexcuseable considering their high caliber and position within this field. When I pay over $100 for a book I expect some editorial process to correct these things, but I guess not. Definitely worth buying regardless.

This is a great little text book for any structural engineer to have, but you must be up on your differential equations/linear algebra to understand even the first chapter. Not sure if a working engineer would have much use for it, except in cases where hand-verification calc is needed for something. For a grad student, definitely a good book.

I am a PhD student in structural engineering at a UK university and this book really does provide an excellent background on the subject, perfectly bridging the gap between the type of material taught in classes and that found in research papers. Some reviewers have suggested that mathematical ability is important, though I'd tend to disagree with this as most of the time it's just a case of performing (some rather tedious) algebraic manipulations.Regrettably, the book is littered with mistakes in notation and mathematics (serious mistakes, such as omissions of derivatives and inverted fractions), so whilst particular strengths in mathematics and mechanics aren't necessary, being confident in what you know in order to correct the errors in this book is essential!I hope the second edition is a little less hasty...

I've always had an interest in stability (of any material, but it's most applicable to steel), but the topic is lightly covered in school. This is a great book that discusses the topic thoroughly.

Anthology: The Men of Steel (special edition 2015 includes new release Raising Steel: Momma Joe’s story) Intermediate Algebra: Concepts & Applications (Bittinger Concepts & Applications) Hardening, Tempering, Annealing and Forging of Steel: A Treatise on the Practical, Treatment and Working of High and Low Grade Steel (Classic Reprint) Camping With the Corps of Engineers: The Complete Guide to Campgrounds Built and Operated by the U.S. Army Corps of Engineers (Wright Guides) The Techniques of Modern Structural Geology, Volume 3: Applications of Continuum Mechanics in Structural Geology Structural Analysis and Design of Tall Buildings: Steel and Composite Construction Principles of Structural Design: Wood, Steel, and Concrete, Second Edition Structural Steel Drafting and Design 2012 IBC Structural/Seismic Design Manual Volume 4: Examples for Steel-Framed Buildings Structural Steel Design (5th Edition) Structural Steel Design: A Practice-Oriented Approach (2nd Edition) Practical Fracture Mechanics for Structural Steel Crain, Theories of DevelopmentConcepts and Applications (Subscription): Concepts and Applications Design for Electrical and Computer Engineers: Theory Concepts and Practice Structural Analysis: With Applications to Aerospace Structures (Solid Mechanics and Its Applications) Structure As Architecture: A Source Book for Architects and Structural Engineers Design Concepts for Engineers (4th Edition) Design Concepts for Engineers Design Concepts for Engineers (5th Edition)