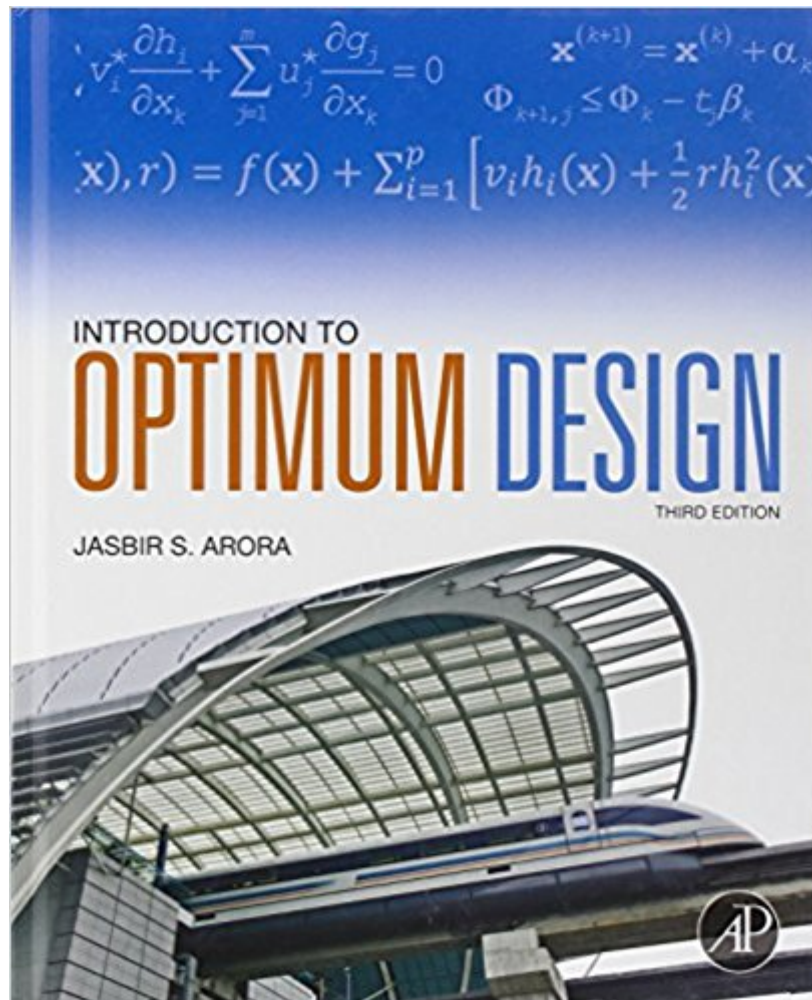




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Introduction To Optimum Design, Third Edition



Synopsis

Introduction to Optimum Design, Third Edition describes an organized approach to engineering design optimization in a rigorous yet simplified manner. It illustrates various concepts and procedures with simple examples and demonstrates their applicability to engineering design problems. Formulation of a design problem as an optimization problem is emphasized and illustrated throughout the text. Excel and MATLAB® are featured as learning and teaching aids. Basic concepts of optimality conditions and numerical methods are described with simple and practical examples, making the material highly teachable and learnable. Includes applications of optimization methods for structural, mechanical, aerospace, and industrial engineering problems. Introduction to MATLAB Optimization Toolbox. Practical design examples introduce students to the use of optimization methods early in the book. New example problems throughout the text are enhanced with detailed illustrations. Optimum design with Excel Solver has been expanded into a full chapter. New chapter on several advanced optimum design topics serves the needs of instructors who teach more advanced courses.

Book Information

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Customer Reviews

"I feel that Dr. Arora presented significant amounts of material in a clear and straightforward manner. The book is definitely a reference that practitioners would like to have and depend upon, especially with the plethora of examples and applications. As an educator, Dr. Arora's book also has a tremendous number of problems at the end of the chapters and examples that I

would try to use in class...the book is a solid introduction to optimization algorithms." - Georges Fadel, Associate Editor, Journal of Mechanical Design "Arora's introduction of a much-anticipated second edition of Introduction to Optimum Design will not only satisfy established users of his well-received first edition, but moreover, significant updates, supplementary material, and fine-tuning of the pedagogical aspects of the presentation will certainly broaden its appeal. Among some of the distinguishing characteristics of Arora's book are its adaptability to audiences with diverse backgrounds, as well as the extent to which it makes the topic clear and approachable...The book would also be excellent as a self-study reference for the practicing engineer. In summary, when considering the pedagogical refinements of the book, the expanded and updated software examples, as well as the extended survey of emerging computational methods, Arora's Introduction to Optimum Design, 2nd Ed., furthers its goal of describing engineering design optimization in a rigorous yet simplified manner which is both highly accessible to and useful for a wide audience." - David F. Thompson, Graduate Program Director, University of Cincinnati "I have used several optimization books over the past 10 years to support my various graduate optimization courses. Of all the books that I have used, I prefer Dr. Arora's Introduction to Optimum Design, 2nd Ed. The strength of this book lies in his attention to detail using numeric exercises to demonstrate the numerical processes used in the various optimization methods. I particularly like his choice of nomenclature throughout the book, as it conforms to the standard symbols and function names used in classical optimization literature. The application exercises presented cover a broad range in technologies, which makes it a good textbook for any engineering discipline." - Tom R. Mincer, California State University "...this book is well written and covers just about every topic that one needs to know about the optimum design process. It includes a good balance of theory and application. The book will therefore be appealing to all users." - Practice Periodical On Structural Design and Construction - ASCE, Nov. 2005

Jasbir Singh Arora is an F. Wendell Miller Professor of Engineering, a Professor of Civil and Environmental Engineering, and a Professor of Mechanical and Industrial Engineering at the University of Iowa. He obtained his PhD in Mechanics and Hydraulics from the University of Iowa. Dr. Arora is the Associate Director of the Center for Computer Aided Design. He is a Senior Advisor for the International Journal of Structural and Multidisciplinary Optimization and he is on the Editorial Board of the International Journal for Numerical Methods in Engineering. He is a Fellow of the American Society of Civil Engineers and the American Society of Mechanical Engineers, and a Senior Member of the American Institute of Aeronautics and Astronautics. Dr. Arora is an

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This is an excellent introductory design optimization textbook. The book is oriented toward engineers, rather than mathematicians. It contains adequate theory, but is not overwhelming to read. Most necessary mathematical topics are discussed in separate sections and Appendices. The reader should possess a basic knowledge of calculus, linear algebra, and statistical methods. A variety of optimization problems and techniques are discussed. Solution techniques using Excel or Matlab are presented. There is sufficient quantity and depth of material for undergraduate or graduate level courses. Recommended.

Not a super useful book. The index is not labeled very well either to find each topic, I probably wouldn't have bought it in retrospect. Better resources online for these topics.

Very good and looks like new

Okay book. Rather long-winded in my opinion.

Book was in very good condition!

good book for price

Nice book to learn optimization. I bought the kindle format and wish that the format could be easier

to navigate.

This is a good text book. It has a lot of examples. I used it in my first course and a loved it.

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