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Nota di contenuto	Preface -- 1 The Conventional Design Process -- 2 Optimality Criteria -- 3 The General Optimization Problem -- 4 Numerical Methods for Unconstrained Optimization -- 5 Numerical Methods for Constrained Optimization -- 6 Optimization of Beams -- 7 Reinforced Shell Structures -- 8 Composite Laminates -- 9 Laminate Optimization -- 10 Optimization with Finite Element Analysis. Final Word -- Appendix -- Index.
Sommario/riassunto	This book offers an introduction to numerical optimization methods in structural design. Employing a readily accessible and compact format, the book presents an overview of optimization methods, and equips readers to properly set up optimization problems and interpret the results. A ‘how-to-do-it’ approach is followed throughout, with less emphasis at this stage on mathematical derivations. The book features

spreadsheet programs provided in Microsoft Excel, which allow readers to experience optimization ‘hands-on.’ Examples covered include truss structures, columns, beams, reinforced shell structures, stiffened panels and composite laminates. For the last three, a review of relevant analysis methods is included. Exercises, with solutions where appropriate, are also included with each chapter. The book offers a valuable resource for engineering students at the upper undergraduate and postgraduate level, as well as others in the industry and elsewhere who are new to these highly practical techniques.While the specific application is to structural design, the principles involved can be applied far more widely.