

Bookmark File Introduction To Aircraft Structural Analysis 2ed Pb 2014 Free Download Pdf

Fundamentals of Structural Analysis, 2nd Edition Matrix Structural Analysis Structural Analysis-II, 4th Edition Matrix Structural Analysis Structural Analysis and Design Structural and Stress Analysis Optimal Structural Analysis Structural Analysis with Finite Elements Fundamentals of Structural Analysis FUNDAMENTALS OF STRUCTURAL ANALYSIS, 2ND ED Examples in Structural Analysis, Second Edition Composite Structural Analysis Matrices for Structural Analysis ... Second Edition Reliability of Structures, Second Edition The History of the Theory of Structures Underneath the Bragg Peaks Reinforced Concrete Structures: Analysis and Design, Second Edition Structural Analysis Structural Engineering Formulas, Second Edition Mechanics of Solids and Structures, Second Edition Structural Analysis of Polymeric Composite Materials Plastic Methods of Structural Analysis 2ND Edition Cloth Matrix Methods of Structural Analysis Design and Analysis of Composite Structures Understanding and Using Structural Concepts Organic Structure Analysis Shell Structures in Civil and Mechanical Engineering Advanced Methods of Structural Analysis Structural and Stress Analysis Structural Analysis Vol II Understanding Structural Analysis Structural Analysis of Polymeric Composite Materials, Second Edition Structural Engineer's Pocket Book, 2nd Edition Design of Structural Elements The Plastic Methods of Structural Analysis ... Second Edition Materials and Structures Structural Analysis of Dwelling Houses ; 2nd Edition Enlarged to Include Surveys of Flats and New Dwellings Matrix Analysis Framed Structures Structural Dynamics for Engineers Marine Structural Design

"Now in its second edition, the Structural Engineer's Pocket Book is a comprehensive pocket reference guide for professional and student structural engineers, particularly those taking the iStructE Part 3 Exam. The combination of tables, data, facts, formulae and rules of thumb make it a valuable aid in scheme design for structural engineers in the office, in transit or on site." "Concise and precise, this second edition is updated to reflect changes to the British Standards, which are used and referenced throughout, as well as the addition of a new section on sustainability. Other subject areas include timber, masonry, steel, concrete, aluminium and glass." --Book Jacket. Structural analysis, or the 'theory of structures', is an important subject for civil engineering students who are required to analyse and design structures. It is a vast field and is largely taught at the undergraduate level. A few topics like matrix method and plastic analysis are also taught at the postgraduate level and in Structural Engineering electives. The entire course has been covered in two volumes—Structural Analysis-I and II. Structural Analysis-II deals in depth with the analysis of indeterminate structures, and also special topics like curved beams and unsymmetrical bending. It provides an introduction to advanced methods of analysis, namely, matrix method and plastic analysis. SALIENT FEATURES □ Systematic explanation of concepts and underlying theory in each chapter □ Numerous solved problems presented methodically □ University examination questions solved in many chapters □ A set of exercises to test the student's ability in solving them correctly NEW IN THE FOURTH EDITION □ Thoroughly reworked computations □ Objective type questions and review questions □ A revamped summary for each chapter □ Redrawing of some diagrams Understanding and Using Structural Concepts, Second Edition provides numerous demonstrations using physical models and practical examples. A significant amount of material, not found in current

textbooks, is included to enhance the understanding of structural concepts and stimulate interest in learning, creative thinking, and design. This is achieved. Design and Analysis of Composite Structures enables graduate students and engineers to generate meaningful and robust designs of complex composite structures. Combining analysis and design methods for structural components, the book begins with simple topics such as skins and stiffeners and progresses through to entire components of fuselages and wings. Starting with basic mathematical derivation followed by simplifications used in real-world design, Design and Analysis of Composite Structures presents the level of accuracy and range of applicability of each method. Examples taken from actual applications are worked out in detail to show how the concepts are applied, solving the same design problem with different methods based on different drivers (e.g. cost or weight) to show how the final configuration changes as the requirements and approach change. Provides a toolkit of analysis and design methods to most situations encountered in practice, as well as analytical frameworks and the means to solving them for tackling less frequent problems. Presents solutions applicable to optimization schemes without having to run finite element models at each iteration, speeding up the design process and allowing examination of several more alternatives than traditional approaches. Includes guidelines showing how decisions based on manufacturing considerations affect weight and how weight optimization may adversely affect the cost. Accompanied by a website at www.wiley.com/go/kassapoglou hosting lecture slides and solutions to the exercises for instructors. Structural Analysis of Polymeric Composite Materials, Second Edition introduces the mechanics of composite materials and structures and combines classical lamination theory with macromechanical failure principles for prediction and optimization of composite structural performance. It addresses topics such as high-strength fibers, manufacturing techniques, commercially available compounds, and the behavior of anisotropic, orthotropic, and transversely isotropic materials and structures subjected to complex loading. Emphasizing the macromechanical (structural) level over micromechanical issues and analyses, this unique book integrates effects of environment at the outset to establish a coherent and updated knowledge base. In addition, each chapter includes example problems to illustrate the concepts presented. Structural analysis is the corner stone of civil engineering and all students must obtain a thorough understanding of the techniques available to analyse and predict stress in any structure. The new edition of this popular textbook provides the student with a comprehensive introduction to all types of structural and stress analysis, starting from an explanation of the basic principles of statics, normal and shear force and bending moments and torsion. Building on the success of the first edition, new material on structural dynamics and finite element method has been included. Virtually no prior knowledge of structures is assumed and students requiring an accessible and comprehensive insight into stress analysis will find no better book available. Provides a comprehensive overview of the subject providing an invaluable resource to undergraduate civil engineers and others new to the subject. Includes numerous worked examples and problems to aid in the learning process and develop knowledge and skills. Ideal for classroom and training course usage providing relevant pedagogy. Marine Structural Design, Second Edition, is a wide-ranging, practical guide to marine structural analysis and design, describing in detail the application of modern structural engineering principles to marine and offshore structures. Organized in five parts, the book covers basic structural design principles, strength, fatigue and fracture, and reliability and risk assessment, providing all the knowledge needed for limit-state design and re-assessment of existing structures. Updates to this edition include new chapters on structural health monitoring and risk-based decision-making, arctic marine structural development, and the addition of new LNG ship topics, including composite materials and structures, uncertainty analysis, and green ship concepts. Provides the structural design principles, background theory, and know-how needed for marine and offshore structural design by analysis. Covers strength, fatigue and fracture, reliability, and risk assessment together in one resource, emphasizing practical considerations and applications. Updates to this edition include new chapters on structural health monitoring and risk-based decision making, and new content on arctic marine structural design. The most up-to-date integrated spectroscopy text available, Organic Structure Analysis,

Second Edition, is the only text that teaches students how to solve structures as they are solved in actual practice. Ideal for advanced undergraduate and graduate courses in organic structure analysis, organic structure identification, and organic spectroscopy, it emphasizes real applications--integrating theory as needed--and introduces students to the latest spectroscopic methods. FEATURES * Focus on Structure: Opens with structural elements and then considers the characteristics, advantages, and disadvantages of spectroscopic methods. Includes coverage of the steps used in determining a molecular structure, the limitations to organic structure determination by spectroscopic methods, and an "Organic Structure Analyses Gone Bad" table (all unique to this text) * Practical Organization: Presents the most commonly used methods first, beginning with an overview of strategies, followed by the use of NMR, and then moving on to mass spectrometry, infrared, and ultraviolet * Innovative Real-World Problem-Solving Approach: Follows the actual information flow used by chemists to solve molecular structures, as opposed to the standard methods-based approach of other texts * Unique Chapter (12) Featuring 51 Structure-Solving Problems: Each problem emphasizes a different method; the problems increase in difficulty throughout the chapter, successively building on students' knowledge and requiring them to integrate multiple methods to identify molecules. NEW TO THE SECOND EDITION * Coverage of the Latest Instrumental and Computational Advances: Examines the use of modern instruments, data processing, and computer-assisted structure elucidation techniques * Updated and Expanded Treatment of NMR (Chapters 2-5): An extensively revised Chapter 5 discusses multi-pulse 1D and 2D NMR methods, 1D TOCSY and 1D NOESY sequences, and using NOESY and ROESY in determining relative stereochemistry and solution conformation. * Additional Coverage of Mass Spectrometry: A new chapter (7) expands the discussion of mass spectrometry to three chapters (6-8). Topics include cutting-edge MS instrumentation and new information on tandem MS techniques, combining NMR with MS, large-molecule MS, chemo-informatics, and more. * More Exercises and Improved Spectra: The second edition includes 25% more problems than the previous edition (279 total). In addition, many of the spectra, including all of those presented in Chapters 11 and 12, have been reprocessed or reacquired for greater clarity. Reliability of Structures enables both students and practising engineers to appreciate how to value and handle reliability as an important dimension of structural design. It discusses the concepts of limit states and limit state functions, and presents methodologies for calculating reliability indices and calibrating partial safety factors. It also supplies information on the probability distributions and parameters used to characterize both applied loads and member resistances. This revised and extended second edition contains more discussions of US and international codes and the issues underlying their development. There is significant revision and expansion of the discussion on Monte Carlo simulation, along with more examples. The book serves as a textbook for a one-semester course for advanced undergraduates or graduate students, or as a reference and guide to consulting structural engineers. Its emphasis is on the practical applications of structural reliability theory rather than the theory itself. Consequently, probability theory is treated as a tool, and enough is given to show the novice reader how to calculate reliability. Some background in structural engineering and structural mechanics is assumed. A solutions manual is available upon qualifying course adoption. Entire book and illustrative examples have been edited extensively, and several chapters repositioned. * Imperial units are used instead of SI units in many of the examples and problems, particularly those of a nonlinear nature that have strong implications for design, since the SI system has not been fully assimilated in practice. This second edition of the highly acclaimed and successful first edition, deals primarily with the analysis of structural engineering systems, with applicable methods to other types of structures. The concepts presented in the book are not only relevant to skeletal structures but can equally be used for the analysis of other systems such as hydraulic and electrical networks. The book has been substantially revised to include recent developments and applications of the algebraic graph theory and matroids. Ten years after the publication of the first English edition of The History of the Theory of Structures, Dr. Kurrer now gives us a much enlarged second edition with a new subtitle: Searching for Equilibrium. The author invites the reader to take part in a journey through time to explore the equilibrium of structures.

That journey starts with the emergence of the statics and strength of materials of Leonardo da Vinci and Galileo, and reaches its first climax with Coulomb's structural theories for beams, earth pressure and arches in the late 18th century. Over the next 100 years, Navier, Culmann, Maxwell, Rankine, Mohr, Castigliano and Müller-Breslau moulded theory of structures into a fundamental engineering science discipline that - in the form of modern structural mechanics - played a key role in creating the design languages of the steel, reinforced concrete, aircraft, automotive and shipbuilding industries in the 20th century. In his portrayal, the author places the emphasis on the formation and development of modern numerical engineering methods such as FEM and describes their integration into the discipline of computational mechanics. Brief insights into customary methods of calculation backed up by historical facts help the reader to understand the history of structural mechanics and earth pressure theory from the point of view of modern engineering practice. This approach also makes a vital contribution to the teaching of engineers. Dr. Kurrer manages to give us a real feel for the different approaches of the players involved through their engineering science profiles and personalities, thus creating awareness for the social context. The 260 brief biographies convey the subjective aspect of theory of structures and structural mechanics from the early years of the modern era to the present day. Civil and structural engineers and architects are well represented, but there are also biographies of mathematicians, physicists, mechanical engineers and aircraft and ship designers. The main works of these protagonists of theory of structures are reviewed and listed at the end of each biography. Besides the acknowledged figures in theory of structures such as Coulomb, Culmann, Maxwell, Mohr, Müller-Breslau, Navier, Rankine, Saint-Venant, Timoshenko and Westergaard, the reader is also introduced to G. Green, A. N. Krylov, G. Li, A. J. S. Pippard, W. Prager, H. A. Schade, A. W. Skempton, C. A. Truesdell, J. A. L. Waddell and H. Wagner. The pioneers of the modern movement in theory of structures, J. H. Argyris, R. W. Clough, T. v. Kármán, M. J. Turner and O. C. Zienkiewicz, are also given extensive biographical treatment. A huge bibliography of about 4,500 works rounds off the book. New content in the second edition deals with earth pressure theory, ultimate load method, an analysis of historical textbooks, steel bridges, lightweight construction, theory of plates and shells, Green's function, computational statics, FEM, computer-assisted graphical analysis and historical engineering science. The number of pages now exceeds 1,200 - an increase of 50% over the first English edition. This book is the first all-embracing historical account of theory of structures from the 16th century to the present day. This authoritative text concentrates on the derivation of simple but reasonably accurate mathematical solutions, and the actual presentation of closed-form results for quantities that are of interest to the designer of shell structures. Note: This purchase option should only be used by those who want a print-version of this textbook. An e-version (PDF) is available at no cost at www.mastan2.com

DESCRIPTION: The aims of the first edition of Matrix Structural Analysis were to place proper emphasis on the methods of matrix structural analysis used in practice and to lay the groundwork for more advanced subject matter. This extensively revised Second Edition accounts for changes in practice that have taken place in the intervening twenty years. It incorporates advances in the science and art of analysis that are suitable for application now, and will be of increasing importance in the years ahead. It is written to meet the needs of both the present and the coming generation of structural engineers.

KEY FEATURES

Comprehensive coverage - As in the first edition, the book treats both elementary concepts and relatively advanced material. Nonlinear frame analysis - An introduction to nonlinear analysis is presented in four chapters: a general introduction, geometric nonlinearity, material nonlinearity, and solution of nonlinear equilibrium equations. Interactive computer graphics program - Packaged with the text is MASTAN2, a MATLAB based program that provides for graphically interactive structure definition, linear and nonlinear analysis, and display of results. Examples - The book contains approximately 150 illustrative examples in which all developments of consequence in the text are applied and discussed.

Market_Desc: Structural engineers, instructors and students. **Special Features:** Content offers a comprehensive treatment of structural theory ranging from the classical methods to modern matrix methods.· Richly textured with photographs.

About The Book: Fundamentals of Structural Analysis, Second

Edition offers a comprehensive and well-integrated presentation of the foundational principles of structural analysis. It presents a rigorous treatment of the underlying theory and a broad spectrum of example problems to illustrate practical applications. The book is richly illustrated with a balance between realistic representations of actual structures and the idealized sketches customarily used in engineering practice. There is a large selection of problems that can be assigned by the instructor that range in difficulty from simple to challenging. This text provides a detailed study of the process of design for structural elements, to British standards, in all four building materials: timber, masonry, concrete and steel. Its scope is wide and its numerous examples and diagrams should make it an ideal course text. For B.E./B.Tech. in Civil Engineering and also useful for M.E./M.Tech. students. The book takes an integral look at structural engineering starting with fundamentals and ending with computer analysis. This book is suitable for 5th, 6th and 7th semesters of undergraduate course. In this edition, a new chapter on plastic analysis has been added. A large number of examples have been worked out in the book so that students can master the subject by practising the examples and problems. In this new edition of his internationally successful book, Kassimali teaches the basic concepts and principles of structural analysis using an intuitive, classical approach. His book covers analysis of statically determinate and indeterminate beams, trusses, and rigid frames, as well as an introduction to matrix analysis of structures. The First Edition was distinguished by the clarity and quality of its explanations of basic structural analysis concepts, supported by detailed step-by-step procedures for analysis and worked-out examples. The Second Edition builds on this foundation with 33% more new problems that include design- and computer-oriented problems. Coverage of Loads on Structures is updated to meet the latest ASCE standards, and the structural analysis software provided on a bound-in CD-ROM is updated to Windows 95 to make it easier for students to use. The second edition of this highly informative book retains much original material covering the principles of structural mechanics and the strength of materials, together with the underlying concepts requisite to the theory of structure and structural design. Some of the material involving lengthy hand-drawing or hand-calculation has been replaced with more up-to-date relevant material and frequent reference is made to computer-aided learning techniques.

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A fully revised guide to the design and analysis of reinforced concrete structures according to the 2014 edition of ACI 318. This practical resource offers concise explanations of reinforced concrete design principles and teaches safe and cost-effective engineering and construction techniques. Reinforced Concrete Structures: Analysis and Design, Second Edition, has been thoroughly updated to reflect the latest requirements in both the 2014 ACI 318 structural concrete code and the 2015 International Building Code®. Examples, procedures, and flowcharts illustrate compliance with each provision. This comprehensive guide features new in-depth coverage of ACI earthquake design requirements. SI units are now included throughout all of the chapters. Reinforced Concrete Structures: Analysis and Design, Second Edition, covers: Material properties of concrete and reinforcing steel. With computers increasingly used to teach students structural design, there is a perception that students are losing a basic understanding of structural design. This text addresses the problem by encouraging basic understanding of the subject. Matrix analysis of structures is a vital subject to every structural analyst, whether working in aero-astro, civil, or mechanical engineering. It provides a comprehensive approach to the analysis of a wide variety of structural types, and therefore offers a major advantage over traditional methods which often differ for each type of structure. The matrix approach also provides an efficient means of describing various steps in the analysis and is easily programmed for digital computers. Use of matrices is natural when performing calculations with a digital computer, because matrices permit large groups of numbers to be manipulated in a simple and effective manner. This book, now in its third edition, was written for both college students and engineers in industry. It serves as a textbook for courses at either the senior or first-year graduate level, and it also provides a permanent reference for practicing engineers. The book explains both the theory and the practical implementation of matrix methods of structural analysis. Emphasis is

placed on developing a physical understanding of the theory and the ability to use computer programs for performing structural calculations. This book has been written to provide practising engineers with an easily understandable introduction to the dynamics of civil engineering whilst ensuring that they acquire an understanding of the theories that form the basis of computer packages. Matrix Methods of Structural Analysis presents how concepts and notations of matrix algebra can be applied to arriving at general systematic approach to structure analysis. The book describes the use of matrix notation in structural analysis as being theoretically both compact and precise, but also, quite general. The text also presents, from the practical point of view, matrix notation as providing a systematic approach to the analysis of structures related to computer programming. Matrix algebraic methods are useful in repeated calculations where manual work becomes tedious. The Gaus-Seidel method and linear programming are two methods to use in solving simultaneous equations. The book then describes the notation for loads and displacements, on sign conventions, stiffness and flexibility matrices, and equilibrium and compatibility conditions. The text discusses the formulation of the equilibrium method using connection matrices and an alternative method. The book evaluates the compatibility method as programmed in a computer; and it discusses the analysis of a pin-jointed truss and of a rigid-jointed truss. The book presents some problems when using computers for analyzing structures, such as decision strategy, accuracy, and checks conducted on handling large matrices. The text also analyzes structures that behave in a non-linear manner. The book is suitable for structural engineers, physicist, civil engineers, and students of architectural design. New Edition Now Covers Thin Plates, Plastic Deformation, Dynamics and Vibration Structural and stress analysis is a core topic in a range of engineering disciplines - from structural engineering through to mechanical and aeronautical engineering and materials science. Structural and Stress Analysis: Theories, Tutorials and Examples, Second Edition Structural Analysis of Polymeric Composite Materials studies the mechanics of composite materials and structures and combines classical lamination theory with macromechanic failure principles for prediction and optimization of composite structural performance. This reference addresses topics such as high-strength fibers, commercially-available compounds, and the behavior of anisotropic, orthotropic, and transversely isotropic materials and structures subjected to complex loading. It provides a wide variety of numerical analyses and examples throughout each chapter and details the use of easily-accessible computer programs for solutions to problems presented in the text. Fundamentals of Structural Analysis offers a comprehensive and well-integrated presentation of the foundational principles of structural analysis. It presents a rigorous treatment of the underlying theory and a broad spectrum of example problems to illustrate practical applications. The book is richly illustrated with a balance between realistic representations of actual structures and the idealized sketches customarily used in engineering practice. There is a large selection of problems that can be assigned by the instructor that range in difficulty from simple to challenging. This second edition of Examples in Structural Analysis uses a step-by-step approach and provides an extensive collection of fully worked and graded examples for a wide variety of structural analysis problems. It presents detailed information on the methods of solutions to problems and the results obtained. Also given within the text is a summary of each of the principal analysis techniques inherent in the design process and where appropriate, an explanation of the mathematical models used. The text emphasises that software should only be used if designers have the appropriate knowledge and understanding of the mathematical modelling, assumptions and limitations inherent in the programs they use. It establishes the use of hand-methods for obtaining approximate solutions during preliminary design and an independent check on the answers obtained from computer analyses. What's New in the Second Edition: New chapters cover the development and use of influence lines for determinate and indeterminate beams, as well as the use of approximate analyses for indeterminate pin-jointed and rigid-jointed plane-frames. This edition includes a rewrite of the chapter on buckling instability, expands on beams and on the use of the unit load method applied to singly redundant frames. The x-y-z co-ordinate system and symbols have been modified to reflect the conventions adopted in the structural Eurocodes. William M. C. McKenzie is also the author of six design textbooks

relating to the British Standards and the Eurocodes for structural design and one structural analysis textbook. As a member of the Institute of Physics, he is both a chartered engineer and a chartered physicist and has been involved in consultancy, research and teaching for more than 35 years. This book provides a solid introduction to the foundation and the application of the finite element method in structural analysis. It offers new theoretical insight and practical advice. This second edition contains additional sections on sensitivity analysis, on retrofitting structures, on the Generalized FEM (X-FEM) and on model adaptivity. An additional chapter treats the boundary element method, and related software is available at www.winfem.de. This revised and significantly expanded edition contains a rigorous examination of key concepts, new chapters and discussions within existing chapters, and added reference materials in the appendix, while retaining its classroom-tested approach to helping readers navigate through the deep ideas, vast collection of the fundamental methods of structural analysis. The authors show how to undertake the numerous analytical methods used in structural analysis by focusing on the principal concepts, detailed procedures and results, as well as taking into account the advantages and disadvantages of each method and sphere of their effective application. The end result is a guide to mastering the many intricacies of the range of methods of structural analysis. The book differentiates itself by focusing on extended analysis of beams, plane and spatial trusses, frames, arches, cables and combined structures; extensive application of influence lines for analysis of structures; simple and effective procedures for computation of deflections; introduction to plastic analysis, stability, and free and forced vibration analysis, as well as some special topics. Ten years ago, Professor Igor A. Karnovsky and Olga Lebed crafted a must-read book. Now fully updated, expanded, and titled *Advanced Methods of Structural Analysis (Strength, Stability, Vibration)*, the book is ideal for instructors, civil and structural engineers, as well as researchers and graduate and post graduate students with an interest in perfecting structural analysis. **PRACTICAL, PORTABLE, AND PACKED WITH UP-TO-DATE STRUCTURAL ENGINEERING FORMULAS** Thoroughly revised with more than 300 new formulas, this compact yet comprehensive compilation puts essential data related to the design and analysis of engineering structures at your fingertips. *Structural Engineering Formulas, Second Edition* covers a wide range of topics, including statics, soils, foundations, retaining structures, pipes, and tunnels, and explains the use and application of each ready-to-use formula. This time-saving reference for civil engineers is also invaluable to students and those studying for licensing exams. **COVERAGE INCLUDES:** Stress and strain—methods of analysis | Properties of geometric sections | Beams--diagrams and formulas for various loading conditions | Frames--diagrams and formulas for various static loading conditions | Arches--diagrams and formulas for various loading conditions | Trusses--method of joints and method of section analysis | Plates--bending moments for various support and loading conditions | Soils | Foundations | Retaining structures | Pipes and tunnels--bending moments for various static loading conditions A popular text in its first edition, *Mechanics of Solids and Structures* serves as a course text for the senior/graduate (fourth or fifth year) courses/modules in the mechanics of solid/advanced strength of materials, offered in aerospace, civil, engineering science, and mechanical engineering departments. Now, *Mechanics of Solid and Structure, Second Edition* presents the latest developments in computational methods that have revolutionized the field, while retaining all of the basic principles and foundational information needed for mastering advanced engineering mechanics. Key changes to the second edition include full-color illustrations throughout, web-based computational material, and the addition of a new chapter on the energy methods of structural mechanics. Using authoritative, yet accessible language, the authors explain the construction of expressions for both total potential energy and complementary potential energy associated with structures. They explore how the principles of minimal total potential energy and complementary energy provide the means to obtain governing equations of the structure, as well as a means to determine point forces and displacements with ease using Castigliano's Theorems I and II. The material presented in this chapter also provides a deeper understanding of the finite element method, the most popular method for solving structural mechanics problems. Integrating computer techniques and programs into the body of the text, all

chapters offer exercise problems for further understanding. Several appendices provide examples, answers to select problems, and opportunities for investigation into complementary topics. Listings of computer programs discussed are available on the CRC Press website. This book is designed to give the structural engineer training in microcomputer technology, starting with theory and computer methods in Part 1 and culminating in extensive listings of programs in both Fortran 77 and Basic in Part 2. Because it provides programs and the information to understand and modify them for specific purposes, it can be used as a text for graduate engineering students or by the professional engineer interested in learning how computers can be applied to practical problems. Data files and worked solutions are included. Some forty programs are explained ranging from cross-sectional and connection analysis, through equation solution methods to linear elastic analysis of plane and space frames, as well as describing the non-linear and large deformation treatment of a variety of frame, cable and arch structures. This new edition extensively revises the chapter on beam analysis, with more powerful theory and programs suitable to the microcomputers of today. Table of contents