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Selection and Use of Engineering Materials - J A Charles 2013-10-22

Selection and Use of Engineering Materials, Second Edition covers the substantial development in the selection and application of materials and of associated materials. This book is organized into four parts encompassing 20 chapters that also consider the advances in materials databases and computer programs. The first part deals with the motivation, cost basis, service requirements, failure analysis, specifications, and quality control of engineering materials. The second part describes the mechanical properties of these materials, including static strength, toughness, stiffness, fatigue, creep, and temperature resistance. The third part examines the selection requirements for surface durability, such as corrosion and wear resistance. This part also explores the relationship between materials selection and materials processing, as well as the formalization of selection procedures. The fourth part provides some case studies in materials selection. This book will prove useful to materials scientists and practicing engineers.

Materials Science of Concrete, Special Volume - Jan P. Skalny 2001-04-28

This volume provides broad coverage of key issues related to the role of calcium hydroxide in cements and concrete. It contains critical topics such as the physicochemical role calcium hydroxide plays in hydration and deterioration of cementing properties as well as the implications of the presence of calcium hydroxide on the future of Portland cement, blended and specialty cements, and ecology of cement production.

Mechanics of Materials - E. J. Hearn 1977

One of the most important subjects for any student of engineering to master is the behaviour of materials and structures under load. The way in which they react to applied forces, the deflections resulting and the stresses and strains set up in the bodies concerned are all vital considerations when designing a mechanical component such that it will not fail under predicted load during its service lifetime. All the essential elements of a treatment of these topics are contained within this course of study, starting with an introduction to the concepts of stress and strain, shear force and bending moments and moving on to the examination of bending, shear and torsion in elements such as beams, cylinders, shells and springs. A simple treatment of complex stress and complex strain leads to a study of the theories of elastic failure and an introduction to the experimental methods of stress and strain analysis. More advanced topics are dealt with in a companion volume - Mechanics of Materials 2. Each chapter contains a summary of the essential formulae which are developed in the chapter, and a large number of worked examples which progress in level of difficulty as the principles are enlarged upon. In addition, each chapter concludes with an extensive selection of problems for solution by the student, mostly examination questions from professional and academic bodies, which are graded according to difficulty and furnished with answers at the end. * Emphasis on practical learning and applications, rather than theory * Provides the essential formulae for each individual chapter * Contains numerous worked examples and problems

Maritime Logistics - Dong-Wook Song 2015-04-03

Globalisation and the rapid increase in world trade in the past decade have contributed to greater demand for international transport and logistics and, consequently, the expansion of the maritime industry. The dramatic changes in the mode of world trade and cargo transportation make it more important than ever to have a clear understanding of the way in which freight is transported by sea and the role of ports in this exchange. At the cutting edge in its assessment of the industry, Maritime Logistics covers the whole scope of maritime logistics and examines latest logistical developments within the port and shipping industry.

With a range of new international contributors, this new edition has been thoroughly revised and updated. There are new chapters on port centric logistics, hinterland logistics and global supply chains, maritime transport and logistics as a trade facilitator, and future trends and developments. Written by a team of international experts with over fifty years' experience in the field, Maritime Logistics provides a truly global perspective. The book covers everything that students of logistics, as well as those working within the industry, need to know about maritime logistics, including shipping lines, containers, tankers, dry bulk, port-centric logistics, and much more.

Elastoplastic Behavior of Highly Ductile Materials - Maosheng Zheng 2019-10-19

This book mainly introduces some basic phenomena and laws of highly ductile materials during elastoplastic deformation, and their engineering applications, such as the transfer and relief of stress concentration in the notch root, the mitigation of possible brittle fracture, the ductile deformation and damage, fatigue, energy absorption, plastic buckling, thermal stress problems, etc. It shows a number of revolutions in modern applications and design, which are beneficial to the safety of modern equipment, and improve applicability. In addition, the first three chapters of this book also briefly introduce the basic knowledge of elastoplastic deformation and analysis as a preliminary knowledge. This book can be used as a textbook for advanced undergraduate students and postgraduate in non-mechanics majors such as mechanical engineering, power, material or civil engineering, as well as scholars and engineers in related fields.

Strength of Materials and Structures - Carl T. F. Ross 1999-08-27

Engineers need to be familiar with the fundamental principles and concepts in materials and structures in order to be able to design structures to resist failures. For 4 decades, this book has provided engineers with these fundamentals. Thoroughly updated, the book has been expanded to cover everything on materials and structures that engineering students are likely to need. Starting with basic mechanics, the book goes on to cover modern numerical techniques such as matrix and finite element methods. There is also additional material on composite materials, thick shells, flat plates and the vibrations of complex structures. Illustrated throughout with worked examples, the book also provides numerous problems for students to attempt. New edition introducing modern numerical techniques, such as matrix and finite element methods Covers requirements for an engineering undergraduate course on strength of materials and structures

A History of Mechanics - René Dugas 2012-11-07

Monumental study traces the history of mechanical principles chronologically from antiquity through the early 20th century. Contributions of ancient Greeks, Leonardo, Galileo, Kepler, Lagrange, others. 116 illustrations.

Minefill 2020-2021 - Ferri Hassani 2021-06-02

The series of International Symposia on Mining with Backfill explores both the theoretical and practical aspects of the application of mine fill, with many case studies from both underground and open-pit mines. Minefill attendees and the Proceedings book audience include mining practitioners, engineering students, operating and regulatory professionals, consultants, academics, researchers, and interested individuals and groups. The papers presented at Minefill symposia regularly offer the novelties and most modern technical solutions in technology, equipment, and research. In that way, the papers submitted for the

Minefill Symposia represent the highest quality and level in the conference domain. For the 2020-2021 edition organizers hope that the papers presented in this publication will also be received with interest by readers around the world, providing inspiration and valuable examples for industry and R&D research.

Cost-effective and Sustainable Road Slope Stabilization and Erosion Control - Laura Fay 2012

"In the United States it is estimated that 75 percent of all roads are low volume roads maintained by some 35,000 local agencies. Low volume roads often omit surface slope protection, and this can lead to slope failure, erosion, and maintenance, safety, and ecological issues. This report presents information on cost effective and sustainable road slope stabilization techniques, with a focus on shallow or near surface slope stabilization and related erosion control methods used on low volume roads. To fully address this topic, planning and site investigation are discussed, as well as erosion control techniques, soil bioengineering and biotechnical techniques, mechanical stabilization, and earthwork techniques. Information presented in this report was obtained through an extensive literature review, and from survey and interview responses. From the survey responses, 30 individuals were interviewed based on the information they made available in the survey. A total of 25 interviews were conducted over the phone, and in two cases written responses were received"--Preface.

Mathematics for 3D Game Programming and Computer Graphics - Eric Lengyel 2002

This resource illustrates the mathematics that a game programmer would need to develop a professional-quality 3D engine. The book starts at a fairly basic level in each of several areas such as vector geometry, modern algebra, and physics, and then progresses to somewhat more advanced topics. Particular attention is given to derivations of key results, ensuring that the reader is not forced to endure gaps in the theory.

Logistics Transportation Systems - MD Sarder 2020-10-17

Logistics Transportation Systems compiles multiple topics on transportation logistics systems from both qualitative and quantitative perspectives, providing detailed examples of real-world logistics workflows. It explores the key concepts and problem-solving techniques required by researchers and logistics professionals to effectively manage the continued expansion of logistics transportation systems, which is expected to reach an estimated 25 billion tons in the United States alone by 2045. This book provides an ample understanding of logistics transportation systems, including basic concepts, in-depth modeling analysis, and network analysis for researchers and practitioners. In addition, it covers policy issues related to transportation logistics, such as security, rules and regulations, and emerging issues including reshoring. This book is an ideal guide for academic researchers and both undergraduate and graduate students in transportation modeling, supply chains, planning, and systems. It is also useful to transportation practitioners involved in planning, feasibility studies, consultation and policy for transportation systems, logistics, and infrastructure. Provides real-world examples of logistics systems solutions for multiple transportation modes, including seaports, rail, barge, road, pipelines, and airports Covers a wide range of business aspects, including customer service, cost, and decision analysis Features key-term definitions, concept overviews, discussions, and analytical problem-solving

Bitcoin and Cryptocurrency Technologies - Arvind Narayanan 2016-07-19

An authoritative introduction to the exciting new technologies of digital money Bitcoin and Cryptocurrency Technologies provides a comprehensive introduction to the revolutionary yet often misunderstood new technologies of digital currency. Whether you are a student, software developer, tech entrepreneur, or researcher in computer science, this authoritative and self-contained book tells you everything you need to know about the new global money for the Internet age. How do Bitcoin and its block chain actually work? How secure are your bitcoins? How anonymous are their users? Can cryptocurrencies be regulated? These are some of the many questions this book answers. It begins by tracing the history and development of Bitcoin and cryptocurrencies, and then gives the conceptual and practical foundations you need to engineer secure software that interacts with the Bitcoin network as well as to integrate ideas from Bitcoin into your own projects. Topics include decentralization, mining, the politics of Bitcoin, altcoins and the cryptocurrency ecosystem, the future of Bitcoin, and more. An essential introduction to the new technologies of digital currency Covers the history and mechanics of Bitcoin and the block chain, security, decentralization, anonymity, politics and regulation, altcoins, and much more Features an accompanying website that includes instructional videos for each chapter, homework problems, programming

assignments, and lecture slides Also suitable for use with the authors' Coursera online course Electronic solutions manual (available only to professors)

Applied Mathematical Modelling of Engineering Problems - N.V. Hritonenko 2013-04-17

The subject of the book is the "know-how" of applied mathematical modelling: how to construct specific models and adjust them to a new engineering environment or more precise realistic assumptions; how to analyze models for the purpose of investigating real life phenomena; and how the models can extend our knowledge about a specific engineering process. Two major sources of the book are the stock of classic models and the authors' wide experience in the field. The book provides a theoretical background to guide the development of practical models and their investigation. It considers general modelling techniques, explains basic underlying physical laws and shows how to transform them into a set of mathematical equations. The emphasis is placed on common features of the modelling process in various applications as well as on complications and generalizations of models. The book covers a variety of applications: mechanical, acoustical, physical and electrical, water transportation and contamination processes; bioengineering and population control; production systems and technical equipment renovation. Mathematical tools include partial and ordinary differential equations, difference and integral equations, the calculus of variations, optimal control, bifurcation methods, and related subjects.

Desiccation Cracks and their Patterns - Lucas Goehring 2016-03-09

Bringing together basic ideas, classical theories, recent experimental and theoretical aspects, this book explains desiccation cracks from simple, easily-comprehensible cases to more complex, applied situations. The ideal team of authors, combining experimental and theoretical backgrounds, and with experience in both physical and earth sciences, discuss how the study of cracks can lead to the design of crack-resistant materials, as well as how cracks can be grown to generate patterned surfaces at the nano- and micro-scales. Important research and recent developments on tailoring desiccation cracks by different methods are covered, supported by straightforward, yet deep theoretical models. Intended for a broad readership spanning physics, materials science, and engineering to the geosciences, the book also includes additional reading especially for students engaged in pattern formation research.

The Freedmen's Book - Lydia Maria Child 1866

SpanPublished in 1865 and edited by abolitionist L. Maria Child, The Freedmens Book was intended to be used to teach recently freed African Americans to read and to provide them with inspiration. Thirsting for education, Freedmen were eagerly enrolling in any schools that would accept them. Child saw a need for texts and provided one of collected stories and poems written by former slaves and noted abolitionists, herself included./span

"Out of the East" - Lafcadio Hearn 1895

Mechanics of Materials - Ferdinand Pierre Beer 2002

For the past forty years Beer and Johnston have been the uncontested leaders in the teaching of undergraduate engineering mechanics. Their careful presentation of content, unmatched levels of accuracy, and attention to detail have made their texts the standard for excellence. The revision of their classic Mechanics of Materials text features a new and updated design and art program; almost every homework problem is new or revised; and extensive content revisions and text reorganizations have been made. The multimedia supplement package includes an extensive strength of materials Interactive Tutorial (created by George Staab and Brooks Breedon of The Ohio State University) to provide students with additional help on key concepts, and a custom book website offers online resources for both instructors and students.

Statics and Mechanics of Materials - Ferdinand Pierre Beer 2020

"Study of statics and mechanics of materials is based on the understanding of a few basic concepts and on the use of simplified models. This approach makes it possible to develop all the necessary formulas in a rational and logical manner, and to clearly indicate the conditions under which they can be safely applied to the analysis and design of actual engineering structures and machine components"--

Concerning Lafcadio Hearn - George Milbry Gould 1908

Lafcadio Hearn (1850-1904) wrote vivid accounts about life in New Orleans, the West Indies, and Japan. This appreciative 1908 biography discusses his birth to an Irish father and Greek mother, his work and

travels, and the impact of poor eyesight on this poet of myopia. "Gould writes, Of Lafcadio Hearn there has been, and will be, no excuse for any biography whatever. A properly edited volume of his letters, and development of his imaginative power and literary character are, and still remain, most desirable."
Mechanics of Materials - Ferdinand Pierre Beer 1992-06

Amber 2021 - David A. Case 2021-06-13

Amber is the collective name for a suite of programs that allow users to carry out molecular dynamics simulations, particularly on biomolecules. None of the individual programs carries this name, but the various parts work reasonably well together, and provide a powerful framework for many common calculations. The term Amber is also used to refer to the empirical force fields that are implemented here. It should be recognized, however, that the code and force field are separate: several other computer packages have implemented the Amber force fields, and other force fields can be implemented with the Amber programs. Further, the force fields are in the public domain, whereas the codes are distributed under a license agreement. The Amber software suite is divided into two parts: AmberTools21, a collection of freely available programs mostly under the GPL license, and Amber20, which is centered around the pmemd simulation program, and which continues to be licensed as before, under a more restrictive license. Amber20 represents a significant change from the most recent previous version, Amber18. (We have moved to numbering Amber releases by the last two digits of the calendar year, so there are no odd-numbered versions.) Please see <https://ambermd.org> for an overview of the most important changes. AmberTools is a set of programs for biomolecular simulation and analysis. They are designed to work well with each other, and with the "regular" Amber suite of programs. You can perform many simulation tasks with AmberTools, and you can do more extensive simulations with the combination of AmberTools and Amber itself. Most components of AmberTools are released under the GNU General Public License (GPL). A few components are in the public domain or have other open-source licenses. See the README file for more information.

Mechanics of Materials - Paul Seth Steif 2012

Mechanics of Materials helps students gain physical and intuitive understanding of the ideas underlying the mechanics of materials; grasp big picture ideas; and use the subject to solve problems—everything it takes to genuinely learn how the forces acting on a material relate to its deformation and failure.

Thanks for the Feedback - Douglas Stone 2015-03-31

The coauthors of the New York Times–bestselling *Difficult Conversations* take on the toughest topic of all: how we see ourselves. Douglas Stone and Sheila Heen have spent the past fifteen years working with corporations, nonprofits, governments, and families to determine what helps us learn and what gets in our way. In *Thanks for the Feedback*, they explain why receiving feedback is so crucial yet so challenging, offering a simple framework and powerful tools to help us take on life’s blizzard of offhand comments, annual evaluations, and unsolicited input with curiosity and grace. They blend the latest insights from neuroscience and psychology with practical, hard-headed advice. *Thanks for the Feedback* is destined to become a classic in the fields of leadership, organizational behavior, and education.

Structural and Stress Analysis - T.H.G. Megson 2005-02-17

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 aide in the learning process and develop knowledge and skills. Ideal for classroom and training course usage providing relevant pedagogy.

Childhood Obesity Prevention - Jennifer A. O'Dea 2010

Childhood obesity is an international public health concern, with a high profile in both the media and

government policy. Controversial issues in the prevention of childhood obesity need to be considered early in the development of school, clinical or community prevention programs, as these issues are often the ones that promote the success or failure of attempts to ameliorate the problem at hand. This book combines health education theory, research, and practice to guide researchers, students, educators, community health workers and practitioners in the prevention of childhood obesity and the promotion of child and adolescent health and well-being. It examines controversy in childhood obesity, including the link with poverty and the difficulty of addressing obesity whilst also tackling the issue of eating disorders. The prevalence of childhood obesity is covered, with international chapters examining the importance of factors such as social class and ethnic differences, and global and local trends are identified. Approaches to prevention are presented, and the book concludes with the successful outcome of various interventions, demonstrating how the whole school community can collaborate to promote health among young people.

Computer Graphics - Donald Hearn 1994

A complete update of a bestselling introduction to computer graphics, this volume explores current computer graphics hardware and software systems, current graphics techniques, and current graphics applications. Includes expanded coverage of algorithms, applications, 3-D modeling and rendering, and new topics such as distributed ray tracing, radiosity, physically based modeling, and visualization techniques.

The Myth of Capitalism - Jonathan Tepper 2018-11-20

The Myth of Capitalism tells the story of how America has gone from an open, competitive marketplace to an economy where a few very powerful companies dominate key industries that affect our daily lives. Digital monopolies like Google, Facebook and Amazon act as gatekeepers to the digital world. Amazon is capturing almost all online shopping dollars. We have the illusion of choice, but for most critical decisions, we have only one or two companies, when it comes to high speed Internet, health insurance, medical care, mortgage title insurance, social networks, Internet searches, or even consumer goods like toothpaste. Every day, the average American transfers a little of their pay check to monopolists and oligopolists. The solution is vigorous anti-trust enforcement to return America to a period where competition created higher economic growth, more jobs, higher wages and a level playing field for all. *The Myth of Capitalism* is the story of industrial concentration, but it matters to everyone, because the stakes could not be higher. It tackles the big questions of: why is the US becoming a more unequal society, why is economic growth anemic despite trillions of dollars of federal debt and money printing, why the number of start-ups has declined, and why are workers losing out.

Mechanics of Materials - Andrew Pytel 2011-01-01

The second edition of *MECHANICS OF MATERIALS* by Pytel and Kiusalaas is a concise examination of the fundamentals of Mechanics of Materials. The book maintains the hallmark organization of the previous edition as well as the time-tested problem solving methodology, which incorporates outlines of procedures and numerous sample problems to help ease students through the transition from theory to problem analysis. Emphasis is placed on giving students the introduction to the field that they need along with the problem-solving skills that will help them in their subsequent studies. This is demonstrated in the text by the presentation of fundamental principles before the introduction of advanced/special topics. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Adapting The Wizard of Oz - Danielle Birkett 2018-11-05

One of the most beloved film musicals of all time, *The Wizard of Oz* represents an enduring family favorite and cultural classic. Yet there is much more to the story than meets the eye, and the MGM movie is just one of many ways in which it has been represented. In this lively and wide-ranging book, editors Danielle Birkett and Dominic McHugh bring together insights from eleven experts into the varied musical forms this great American myth has taken in the past century. Starting with the early adaptations of L. Frank Baum's story, the book also explores the writing, composition and reception of the MGM film, its importance in queer culture, stage adaptations of the movie, cult classic *The Wiz*, Stephen Schwartz's Broadway blockbuster *Wicked*, and the cultural afterlife of the iconic Arlen-Harburg songs. What emerges is a vivid overview of how music - on stage and screen - has been an essential part of the story's journey to become a centerpiece of American culture.

Material Science - S. L. Kakani 2006-12

The Book Has Been Designed To Cover All Relevant Topics In B.E. (Mechanical/Metallurgy / Material Science / Production Engineering), M.Sc. (Material Science), B.Sc. (Honours), M.Sc. (Physics), M.Sc. (Chemistry), Amie And Diploma Students. Students Appearing For Gate, Upsc, Net, Slet And Other Entrance Examinations Will Also Find Book Quite Useful. In Nineteen Chapters, The Book Deals With Atomic Structure, The Structure Of Solids; Crystal Defects; Chemical Bonding; Diffusion In Solids; Mechanical Properties And Tests Of Materials; Alloys, Phase Diagrams And Phase Transformations; Heat Treatment; Deformation Of Materials; Oxidation And Corrosion; Electric, Magnetic, Thermal And Optical Properties; Semiconductors; Superconductivity; Organic Materials; Composites; And Nanostructured Materials. Special Features: * Fundamental Principles And Applications Are Discussed With Explanatory Diagrams In A Clear Way. * A Full Coverage Of Background Topics With Latest Development Is Provided. * Special Chapters On Nanostructured Materials, Superconductivity, Semiconductors, Polymers, Composites, Organic Materials Are Given. * Solved Problems, Review Questions, Problems, Short-Question Answers And Typical Objective Type Questions Alongwith Suggested Readings Are Given With Each Chapter.

Searching and Seizing Computers and Obtaining Electronic Evidence in Criminal Investigations -

Orin S. Kerr 2001

Mechanics of Materials Volume 1 - E.J. Hearn 1997-07-09

One of the most important subjects for any student of engineering to master is the behaviour of materials and structures under load. The way in which they react to applied forces, the deflections resulting and the stresses and strains set up in the bodies concerned are all vital considerations when designing a mechanical component such that it will not fail under predicted load during its service lifetime. All the essential elements of a treatment of these topics are contained within this course of study, starting with an introduction to the concepts of stress and strain, shear force and bending moments and moving on to the examination of bending, shear and torsion in elements such as beams, cylinders, shells and springs. A simple treatment of complex stress and complex strain leads to a study of the theories of elastic failure and an introduction to the experimental methods of stress and strain analysis. More advanced topics are dealt with in a companion volume - Mechanics of Materials 2. Each chapter contains a summary of the essential formulae which are developed in the chapter, and a large number of worked examples which progress in level of difficulty as the principles are enlarged upon. In addition, each chapter concludes with an extensive selection of problems for solution by the student, mostly examination questions from professional and academic bodies, which are graded according to difficulty and furnished with answers at the end. * Emphasis on practical learning and applications, rather than theory * Provides the essential formulae for each individual chapter * Contains numerous worked examples and problems

Mechanics of Materials Volume 1 - E.J. Hearn 1997-08-01

One of the most important subjects for any student of engineering to master is the behaviour of materials and structures under load. The way in which they react to applied forces, the deflections resulting and the stresses and strains set up in the bodies concerned are all vital considerations when designing a mechanical component such that it will not fail under predicted load during its service lifetime. All the essential elements of a treatment of these topics are contained within this course of study, starting with an introduction to the concepts of stress and strain, shear force and bending moments and moving on to the examination of bending, shear and torsion in elements such as beams, cylinders, shells and springs. A simple treatment of complex stress and complex strain leads to a study of the theories of elastic failure and an introduction to the experimental methods of stress and strain analysis. More advanced topics are dealt with in a companion volume - Mechanics of Materials 2. Each chapter contains a summary of the essential formulae which are developed in the chapter, and a large number of worked examples which progress in level of difficulty as the principles are enlarged upon. In addition, each chapter concludes with an extensive selection of problems for solution by the student, mostly examination questions from professional and academic bodies, which are graded according to difficulty and furnished with answers at the end.

Introduction to Computational Science - Angela B. Shiflet 2014-03-30

Computational science is an exciting new field at the intersection of the sciences, computer science, and mathematics because much scientific investigation now involves computing as well as theory and experiment. This textbook provides students with a versatile and accessible introduction to the subject. It assumes only a background in high school algebra, enables instructors to follow tailored pathways through the material, and is the only textbook of its kind designed specifically for an introductory course in the computational science and engineering curriculum. While the text itself is generic, an accompanying website offers tutorials and files in a variety of software packages. This fully updated and expanded edition features two new chapters on agent-based simulations and modeling with matrices, ten new project modules, and an additional module on diffusion. Besides increased treatment of high-performance computing and its applications, the book also includes additional quick review questions with answers, exercises, and individual and team projects. The only introductory textbook of its kind—now fully updated and expanded Features two new chapters on agent-based simulations and modeling with matrices Increased coverage of high-performance computing and its applications Includes additional modules, review questions, exercises, and projects An online instructor's manual with exercise answers, selected project solutions, and a test bank and solutions (available only to professors) An online illustration package is available to professors

Significance of Tests and Properties of Concrete and Concrete-making Materials - Joseph F. Lamond 2006

The Albumen & Salted Paper Book - James M. Reilly 1980

Mechanics of Materials 2 - E.J. Hearn 1997-11-25

One of the most important subjects for any student of engineering or materials to master is the behaviour of materials and structures under load. The way in which they react to applied forces, the deflections resulting and the stresses and strains set up in the bodies concerned are all vital considerations when designing a mechanical component such that it will not fail under predicted load during its service lifetime. Building upon the fundamentals established in the introductory volume Mechanics of Materials 1, this book extends the scope of material covered into more complex areas such as unsymmetrical bending, loading and deflection of struts, rings, discs, cylinders plates, diaphragms and thin walled sections. There is a new treatment of the Finite Element Method of analysis, and more advanced topics such as contact and residual stresses, stress concentrations, fatigue, creep and fracture are also covered. Each chapter contains a summary of the essential formulae which are developed in the chapter, and a large number of worked examples which progress in level of difficulty as the principles are enlarged upon. In addition, each chapter concludes with an extensive selection of problems for solution by the student, mostly examination questions from professional and academic bodies, which are graded according to difficulty and furnished with answers at the end.

Games, Puzzles, and Computation - Robert A. Hearn 2009-06-30

The authors show that there are underlying mathematical reasons for why games and puzzles are challenging (and perhaps why they are so much fun). They also show that games and puzzles can serve as powerful models of computation—quite different from the usual models of automata and circuits—offering a new way of thinking about computation. The appen

The Art of Lecturing - Parham Aarabi 2007-09-06

This volume is a simple and clear guide to lecturing. It offers strategies for successful lectures in the academic and business communities. Told from a lecturing mindset, this book aims to combat fear and nervousness, while presenting successful tricks and tactics. Parham Aarabi discusses a wide array of practical ideas that may surprise and help even the most experienced public speakers. In addition, Aarabi provides a unique insight into lecturing for 21st century audiences based on his own lecturing experiences at the University of Toronto and Stanford University. Aarabi is the winner of the 2004 IEEE Mac Van Valkenburg Early Career Teaching Award for 'inspirational classroom instruction'.

Gleanings in Buddha-fields - Lafcadio Hearn 1910