

Easy Solutions Presents Easy Introduction To Uml Intoduction To Uml

Introduction to Simple Shock Waves in Air With Numerical Solutions Using Artificial Viscosity Springer Nature

Scientific computing is the study of how to use computers effectively to solve problems that arise from the mathematical modeling of phenomena in science and engineering. It is based on mathematics, numerical and symbolic/algebraic computations and visualization. This book serves as an introduction to both the theory and practice of scientific computing, with each chapter presenting the basic algorithms that serve as the workhorses of many scientific codes; we explain both the theory behind these algorithms and how they must be implemented in order to work reliably in finite-precision arithmetic. The book includes many programs written in Matlab and Maple – Maple is often used to derive numerical algorithms, whereas Matlab is used to implement them. The theory is developed in such a way that students can learn by themselves as they work through the text. Each chapter contains numerous examples and problems to help readers understand the material “hands-on”.

This new edition adds several new chapters and is thoroughly updated to include data on new topics such as hydraulic fracturing, CO₂ sequestration, sustainable groundwater management, and more. Providing a complete treatment of the theory and practice of groundwater engineering, this new handbook also presents a current and detailed review of how to model the flow of water and the transport of contaminants both in the unsaturated and saturated zones, covers the protection of groundwater, and the remediation of contaminated groundwater.

This volume, the 8th in the Transactions on Aspect-Oriented Software Development series, contains two regular submissions and a special section, consisting of five papers, on the industrial applications of aspect technology. The regular papers describe a framework for constructing aspect weavers, and patterns for reusable aspects. The special section begins with an invited contribution on how AspectJ is making its way from an exciting new hype topic to a valuable technology in enterprise computing. The remaining four papers each cover different industrial applications of aspect technology, which include a telecommunication platform, a framework for embedding user assistance in independently developed applications, a platform for digital publishing, and a framework for program code analysis and manipulation.

This volume is a selection of invaluable papers by P-G de Gennes — 1991 Nobel Prize winner in Physics — which have had a long-lasting impact on our understanding of condensed matter. Important ideas on polymers, liquid crystals and interfaces are described. The author has added some afterthoughts to the main papers (explaining their successes or weaknesses), and some current views on each special problem. The text is simple and easy to read. Contents: Part I: Solid State Part II: Liquid Crystals Part III: Polymers Part IV: Interfaces Part V: Wetting and Adhesion Part VI: Chirality Readership: Physicists, chemists, hydrodynamicists and materials scientists.

Keywords: Polymers; Liquid Crystals; Interfaces; Chirality; Wetting Reviews: Review of the first edition: “This book collects a series of articles in which problems which had always been thought quite intractable are shown to be solved by simple, but clear thinking. Although the phrase 'simple views' is justified by the clarity of de Gennes' exposition, the problems had been unresolved for decades and it is a tribute to de Gennes' intuitive skill that he has been able to solve so many problems which are not only deep basic science, but also central in modern technology.” Sam Edwards Univ. Cambridge, UK, 1992 Reviews of the First Edition: “For amateurs and connoisseurs — interested in physics, chemistry or biology — Pierre-Gilles de Gennes has opened his gentry-style cabinet de curiosités. Miscellaneous products of his inventive industry, including the famous and the unfamous, are brought together in this self-selected collection, accompanied with recent hindsightful remarks of the Nobel laureate.” Gérard Toulouse Ecole Normale Supérieure, France “This volume of collected works of Pierre-Gilles de Gennes will be a valuable and stimulating source for many years to come for younger readers and for beginners in the subfields of condensed matter covered in this volume, as well as a useful and compact reference book for all workers in the field.” Helmut R Brand Advanced Materials “This book surely satisfies the requirements of those interested in this field of physics. On the whole I think that this book can give, especially to a young reader, a certain feeling about the enthusiasm and novelty of condensed matter research during the last three decades.” Il Nuovo Saggiatore

Now in dynamic full color, ENGINEERING FUNDAMENTALS: AN INTRODUCTION TO ENGINEERING, 5e helps students develop the strong problem-solving skills and solid foundation in fundamental principles they will need to become analytical, detail-oriented, and creative engineers. The book opens with an overview of what engineers do, an inside glimpse of the various areas of specialization, and a straightforward look at what it takes to succeed. It then covers the basic physical concepts and laws that students will encounter on the job. Professional Profiles throughout the text highlight the work of practicing engineers from around the globe, tying in the fundamental principles and applying them to professional engineering. Using a flexible, modular format, the book demonstrates how engineers apply physical and chemical laws and principles, as well as mathematics, to design, test, and supervise the production of millions of parts, products, and services that people use every day. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Digte. A selection of sixty-eight poems which were written over a time span of sixty-four years

Didactics of Mathematics as a Scientific Discipline describes the state of the art in a new branch of science. Starting from a general perspective on the didactics of mathematics, the 30 original contributions to the book, drawn from 10 different countries, go on to identify certain subdisciplines and suggest an overall structure or ‘topology’ of the field. The book is divided into eight sections: (1) Preparing Mathematics for Students; (2) Teacher Education and Research on Teaching; (3) Interaction in the Classroom; (4) Technology and Mathematics Education; (5) Psychology of Mathematical Thinking; (6) Differential Didactics; (7) History and Epistemology of Mathematics and Mathematics Education; (8) Cultural Framing of Teaching and Learning Mathematics. Didactics of Mathematics as a Scientific Discipline is required reading for all researchers into the didactics of mathematics, and contains surveys and a variety of stimulating reflections which make it extremely useful for mathematics educators and teacher trainers interested in the theory of their practice. Future and practising teachers of mathematics will find much to interest them in relation to their daily work, especially as it relates to the teaching of different

age groups and ability ranges. The book is also recommended to researchers in neighbouring disciplines, such as mathematics itself, general education, educational psychology and cognitive science. Intelligent Information Systems (IIS) can be defined as the next generation of Information Systems (IS) developed as a result of integration of AI and database (DB) technologies. IIS embody knowledge that allows them to exhibit intelligent behavior, allows them to cooperate with users and other systems in problem solving, discovery, retrieval, and manipulation of data and knowledge. For any IIS to serve its purpose, the information must be available when it is needed. This means that the computing systems used to store data and process the information, and the security controls used to protect it must be functioning correctly. This book covers some of the above topics and it is divided into four sections: Classification, Approximation and Data Security, Knowledge Management, and Application of IIS to medical and music domains.

No matter the field, professionals need to respond quickly to quantitative problems as they arise and to develop a quick understanding of what the data mean. Whether you are an aide to a city council member trying to decipher the true meaning of a citizen opinion poll, a private consultant to the health department estimating the number of pregnant teenagers in a neighborhood, or the executive director of a small agency striving to present your budget facts precisely and clearly, the techniques presented here are helpful to you and your work. Presents relatively simple techniques that can be applied quickly when a complete, thorough solution is not possible Provides instructions for the use of each technique and examples with problem solutions

Complete PET is a brand new course for the PET exam. It combines the very best in contemporary classroom practice with stimulating topics aimed at teenagers and young adults. The course covers every part of the PET exam in detail providing preparation, practice, information and advice to ensure that students are fully prepared for every part of the exam. Informed by Cambridge's unique searchable database of real exam scripts, the Cambridge Learner Corpus, and providing an official PET past exam paper from Cambridge ESOL, Complete PET is the most authentic PET exam preparation course available.

Many textbooks on differential equations are written to be interesting to the teacher rather than the student. Introduction to Differential Equations with Dynamical Systems is directed toward students. This concise and up-to-date textbook addresses the challenges that undergraduate mathematics, engineering, and science students experience during a first course on differential equations. And, while covering all the standard parts of the subject, the book emphasizes linear constant coefficient equations and applications, including the topics essential to engineering students. Stephen Campbell and Richard Haberman--using carefully worded derivations, elementary explanations, and examples, exercises, and figures rather than theorems and proofs--have written a book that makes learning and teaching differential equations easier and more relevant. The book also presents elementary dynamical systems in a unique and flexible way that is suitable for all courses, regardless of length.

This book explores a range of prospective avenues, models, and operational and strategic approaches to Lean Six Sigma (LSS), a contemporary Continuous Improvement (CI) practice for achieving a quality-based competitive edge in organisations. Lean Six Sigma project case studies from banking organizations help to illustrate the operational dimensions of LSS, while the case-specific and cross-case analyses presented here demonstrate its strategic value. While the case data used to arrive at the findings come from the Banking firms, it allows generalizability beyond the Banking and Financial Services sector. The book contends that LSS is not merely a CI practice, but a higher-order organizational capability, more precisely a dynamic capability, that allows firms to gain a competitive edge based on quality. Addressing the interests of practitioners and researchers alike, the book strikes a balance between theory and practice. For practitioners, it offers guidance on using LSS to gain a competitive advantage, and on evidence-based practice in quality management and operational excellence. For researchers, it presents a wealth of literature and expands the body of knowledge on quality management. Accordingly, the book is of immense value to both practitioners and researchers, helping the former unlock the value of LSS as both an operational and strategic resource, and highlighting potential research directions and applications for the latter. "This book provides a deep understanding of Lean Six Sigma applications. It inspires by transferring the principles of the concept into uncommon areas of operations and management behind the usual quality and project management. While reading the book I got hit by a great idea of applying Lean Six Sigma in my digital business as well. My impression at the end of the book was that sky is the limit for the right employment of Lean Six Sigma, especially while viewing it from a dynamic capabilities' lens. Readers of this book will surely receive insights for improving their business processes both operationally and strategically. Although the book is focused on banking, it is actually suitable for a really wide audience. This is a brilliant piece of research as a book that will serve as a guide for transformation by the prism of Lean Six Sigma." - Professor. Dr. ZornitsaYordanova, Chief Assistant Professor of Innovation Management, University of National and World Economy, Sofia, Bulgaria "Lean Six Sigma needs to be understood from a systems perspective and there exists a huge knowledge gap in this area of finding holistic solutions to business problems. This book is a very welcome work that addresses this call. It integrates quality management resources and dynamic capabilities view towards practice. Banking and Financial Services was aptly chosen as it has the most direct applicability for social enterprises. Anyone interested in creating more impact with less will surely benefit from reading the book" -Alex Abraham, Chief Executive Officer, Lean Success Partners, Winnipeg, Manitoba, Canada "The book is a refreshing booster to the world of Quality Management especially in the context of Banking and Financial Services. Concepts and terms like "Rapidness of Lean & robustness of Six Sigma to solve operational problems" "Hybrid methodology" resonate very well with what we do in the industry today. Another interesting fact about the book is applying "Dynamic Capabilities approach" to Quality Management, that sets a fresh Quality Oven and ensures this book is definitely a good investment of authors' intellect. Best part – Even if a reader is new to the world of Quality, this book will be appropriate and resonating. For Researchers and Practitioners, both being leaders or fresh entrants, this book stands out to be a must-read, as it demonstrates the success of the Lean Six Sigma methodology via case studies and practical applications." -Udit Salvan, Director, Global Transformation & Engineering Network, An American Multinational Financial Services Corporation, New York, USA

This book includes a selection of papers from the 2018 World Conference on Information Systems and Technologies (WorldCIST'18), held in Naples, Italy on March 27-29, 2018. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and the challenges of modern information systems and technologies research together with their technological development and applications. The main topics covered are: A) Information and Knowledge Management; B) Organizational Models and Information Systems; C) Software and Systems Modeling; D) Software Systems, Architectures, Applications and Tools; E) Multimedia Systems and Applications; F) Computer Networks, Mobility and Pervasive Systems; G) Intelligent and Decision Support Systems; H) Big Data Analytics and Applications; I) Human-Computer Interaction; J) Ethics, Computers & Security; K) Health Informatics; L) Information Technologies in Education; M) Information Technologies in Radiocommunications; N) Technologies for Biomedical Applications.

A concise introduction to numerical methods and the mathematical framework needed to understand their performance Numerical Solution of Ordinary Differential Equations presents a complete and easy-to-follow introduction to classical topics in the numerical solution of ordinary differential equations. The book's approach not only explains the presented mathematics, but also helps readers understand how these numerical methods are used to solve real-world problems. Unifying perspectives are provided throughout the text, bringing together and categorizing different types of problems in order to help readers comprehend the applications of ordinary differential equations. In addition, the authors' collective academic experience ensures a coherent and accessible discussion of key topics, including: Euler's method Taylor and Runge-Kutta methods General error analysis for multi-step methods Stiff differential equations Differential algebraic equations Two-point boundary value problems Volterra integral equations Each chapter features problem sets that enable readers to test and build their knowledge of the presented methods, and a related Web site features MATLAB® programs that facilitate the exploration of numerical methods in greater depth. Detailed references outline additional literature on both analytical and numerical aspects of ordinary differential equations for further exploration of individual topics. Numerical Solution of Ordinary Differential Equations is an excellent textbook for courses on the numerical solution of differential equations at the upper-undergraduate and beginning graduate levels. It also serves as a valuable reference for researchers in the fields of mathematics and engineering.

Covering theory and practical industry usage of the finite element method, this highly-illustrated step-by-step approach thoroughly introduces methods using ANSYS.

Recursion is one of the most fundamental concepts in computer science and a key programming technique that allows computations to be carried out repeatedly. Despite the importance of recursion for algorithm design, most programming books do not cover the topic in detail, despite the fact that numerous computer programming professors and researchers in the field of computer science education agree that recursion is difficult for novice students. Introduction to Recursive Programming provides a detailed and comprehensive introduction to recursion. This text will serve as a useful guide for anyone who wants to learn how to think and program recursively, by analyzing a wide variety of computational problems of diverse difficulty. It contains specific chapters on the most common types of recursion (linear, tail, and multiple), as well as on algorithm design paradigms in which recursion is prevalent (divide and conquer, and backtracking). Therefore, it can be used in introductory programming courses, and in more advanced classes on algorithm design. The book also covers lower-level topics related to iteration and program execution, and includes a rich chapter on the theoretical analysis of the computational cost of recursive programs, offering readers the possibility to learn some basic mathematics along the way. It also incorporates several elements aimed at helping students master the material. First, it contains a larger collection of simple problems in order to provide a solid foundation of the core concepts, before diving into more complex material. In addition, one of the book's main assets is the use of a step-by-step methodology, together with specially designed diagrams, for guiding and illustrating the process of developing recursive algorithms. Furthermore, the book covers combinatorial problems and mutual recursion. These topics can broaden students' understanding of recursion by forcing them to apply the learned concepts differently, or in a more sophisticated manner. The code examples have been written in Python 3, but should be straightforward to understand for students with experience in other programming languages. Finally, worked out solutions to over 120 end-of-chapter exercises are available for instructors.

A complete treatment of the theory and practice of groundwater engineering, The Handbook of Groundwater Engineering, Second Edition provides a current and detailed review of how to model the flow of water and the transport of contaminants both in the unsaturated and saturated zones, covers the production of groundwater and the remediation of contaminated groundwater.

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

Introduction to Computational Modeling Using C and Open-Source Tools presents the fundamental principles of computational models from a computer science perspective. It explains how to implement these models using the C programming language. The software tools used in the book include the Gnu Scientific Library (GSL), which is a free software library

Manual of Nursing Procedures and Practice will guide nurses in a variety of settings to provide expertise and efficient patient care. It will also be an iconic resource in coaching and mentoring the novice and practicing nurses to build their competence and confidence.

This book constitutes the refereed proceedings of the 9th Pacific Rim International Workshop on Multi-Agents, PRIMA 2006, held in Guilin, China, in August 2006. The book presents 39 revised full papers and 57 revised short papers together with 4 invited talks, addressing subjects from theoretical and methodological issues to applications. Topics include agent models, agent architectures, agent-oriented software engineering, semantic Web service, collaboration, coordination and negotiation, and more.

This book provides an elementary introduction to one-dimensional fluid flow problems involving shock waves in air. The differential equations of fluid flow are approximated by finite difference equations and these in turn are numerically integrated in a stepwise manner, with artificial viscosity introduced into the numerical calculations in order to deal with shocks. This treatment of the subject is focused on the finite-difference approach to solve the coupled differential equations of fluid flow and presents the results arising from the numerical solution using Mathcad programming. Both plane and spherical shock waves are discussed with particular emphasis on very strong explosive shocks in air. This expanded second edition features substantial new material on sound wave parameters, Riemann's method for numerical integration of the equations of motion, approximate analytical expressions for weak shock waves, short duration piston motion, numerical results for shock wave interactions, and new appendices on the piston withdrawal problem and numerical results for a closed shock tube. This text will appeal to students, researchers, and professionals in shock wave research and related fields. Students in particular will appreciate the benefits of numerical methods in fluid mechanics and the level of presentation.

[Copyright: c3616bdea73148d616e7a59fd4dc4ace](#)