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KEY=GROWTH - MOON KEIRA

FINITE DIFFERENCE COMPUTING WITH EXPONENTIAL DECAY MODELS

Springer This text provides a very simple, initial introduction to the complete scientific computing pipeline: models, discretization, algorithms, programming, verification, and visualization. The pedagogical strategy is to use one case study - an ordinary differential equation describing exponential decay processes - to illustrate fundamental concepts in mathematics and computer science. The book is easy to read and only requires a command of one-variable calculus and some very basic knowledge about computer programming. Contrary to similar texts on numerical methods and programming, this text has a much stronger focus on implementation and teaches testing and software engineering in particular.

GRAPHING CALCULATOR STRATEGIES: ALGEBRA

Teacher Created Materials "Integrate TI Graphing Calculator technology into your algebra instruction with this award-winning resource book. Perfect for grades 6-12, this resource includes lessons, problem-solving practice, and step-by-step instructions for using graphing calculator technology. 238pp plus Teacher Resource CD with PDF files of the tables, templates, activity sheets, and student guides for TI-83/84 Plus Family and TI-73 Explorer"--Ebook Library public metadata view summary.

SOLAR AND STELLAR DYNAMOS

SAAS-FEE ADVANCED COURSE 39 SWISS SOCIETY FOR ASTROPHYSICS AND ASTRONOMY

Springer Astrophysical dynamos are at the heart of cosmic magnetic fields of a wide range of scales, from planets and stars to entire galaxies. This book presents a thorough, step-by-step introduction to solar and stellar dynamos. Looking first at the ultimate origin of cosmic seed magnetic fields, the antagonists of field amplification are next considered: resistive decay, flux expulsion, and flows ruled out by anti-dynamo theorems. Two kinematic flows that can act as dynamos are then studied: the Roberts cell and the CP-flow. Mean-field electrodynamics and derivation of the mean-field dynamo equations lead to the alpha Omega-dynamo, the flux transport dynamo, and dynamos based on the Babcock-Leighton mechanism. Alternatives to the mean-field theory are also presented, as are global MHD dynamo simulations. Fluctuations and grand minima in the solar cycle are discussed in terms of dynamo modulations through stochastic forcing and nonlinear effects. The book concludes with an overview of the major challenges in understanding stellar magnetic fields and their evolution in terms of various dynamo models, global MHD simulations, and fossil fields. Each chapter is accompanied by an annotated bibliography, guiding the readers to the relevant technical literature, which may lead them to carry out their own research in the field of dynamo theory.

INTRODUCTORY BUSINESS STATISTICS

Introductory Business Statistics is designed to meet the scope and sequence requirements of the one-semester statistics course for business, economics, and related majors. Core statistical concepts and skills have been augmented with practical business examples, scenarios, and exercises. The result is a meaningful understanding of the discipline, which will serve students in their business careers and real-world experiences.

PRECALCULUS

"Precalculus is intended for college-level precalculus students. Since precalculus courses vary from one institution to the next, we have attempted to meet the needs of as broad an audience as possible, including all of the content that might be covered in any particular course. The result is a comprehensive book that covers more ground than an instructor could likely cover in a typical one- or two-semester course; but instructors should find, almost without fail, that the topics they wish to include in their syllabus are covered in the text. Many chapters of OpenStax College Precalculus are suitable for other freshman and sophomore math courses such as College Algebra and Trigonometry; however, instructors of those courses might need to supplement or adjust the material. OpenStax will also be releasing College Algebra and Algebra and trigonometry titles tailored to the particular scope, sequence, and pedagogy of those courses."--Preface.

REVISE HSC MATHEMATICS IN A MONTH

Pascal Press

ELEMENTARY DIFFERENTIAL EQUATIONS

Brooks/Cole Publishing Company Homework help! Worked-out solutions to select problems in the text.

ENCYCLOPAEDIA OF MATHEMATICS, SUPPLEMENT III

Springer Science & Business Media This is the third supplementary volume to Kluwer's highly acclaimed twelve-volume Encyclopaedia of Mathematics. This additional volume contains nearly 500 new entries written by experts and covers developments and topics not included in the previous volumes. These entries are arranged alphabetically throughout and a detailed index is included. This supplementary volume enhances the existing twelve volumes, and together, these thirteen volumes represent the most authoritative, comprehensive and up-to-date Encyclopaedia of Mathematics available.

EMERGENT NATURE

PATTERNS, GROWTH AND SCALING IN THE SCIENCES

World Scientific This book, based on presentations made at the international conference Fractals 2002, is of interest to everyone in the general field of nonlinear dynamics. The abundance of papers from numerous disciplines makes it exciting reading and provides a unifying thread through the topics, such as ray tracing, structure of peptides, modeling fractal surfaces, cancer growth, macaque monkey cortical neurons, occurrence of earthquakes, and patterns of the World Wide Web. Contents: Modeling Cerebellar Dynamics (M G Velarde et al.) Two and Three Dimensional Computer Simulation of Cancer Growth (S Flores Ascencio et al.) Structural and Dynamic Complexity of an Elastin-Related Peptide (A Bonelli et al.) Cumulative Effective Hölder Exponent Based Indicator for Real-Time Fetal Heartbeat Analysis During Labour (Z R Struzik & W J van Wijngaarden) Fractal Features in the Nonstationarity of Physiological Time Series (P Ch Ivanov et al.) Fractal Analysis of Aggregates of Non-Uniformly Sized Particles: An Application to Macaque Monkey Cortical Pyramidal Neurons (B I Henry et al.) Dynamics of Solar Magnetic Field from Synoptic Charts (N G Makarenko & L M Karimova) Side-Branching in the Nonlinear Zone: A Self-Similar Region in Dendritic Crystal Growth (R González-Cinca) and other papers Readership: Researchers in nonlinear science. Keywords:

EXPLORING MONTE CARLO METHODS

Elsevier Exploring Monte Carlo Methods is a basic text that describes the numerical methods that have come to be known as "Monte Carlo." The book treats the subject generically through the first eight chapters and, thus, should be of use to anyone who wants to learn to use Monte Carlo. The next two chapters focus on applications in nuclear engineering, which are illustrative of uses in other fields. Five appendices are included, which provide useful information on probability distributions, general-purpose Monte Carlo codes for radiation transport, and other matters. The famous "Buffon's needle problem" provides a unifying theme as it is repeatedly used to illustrate many features of Monte Carlo methods. This book provides the basic detail necessary to learn how to apply Monte Carlo methods and thus should be useful as a text book for undergraduate or graduate courses in numerical methods. It is written so that interested readers with only an understanding of calculus and differential equations can learn Monte Carlo on their own. Coverage of topics such as variance reduction, pseudo-random number generation, Markov chain Monte Carlo, inverse Monte Carlo, and linear operator equations will make the book useful even to experienced Monte Carlo practitioners. Provides a concise treatment of generic Monte Carlo methods Proofs for each chapter Appendixes include Certain mathematical functions; Bose Einstein functions, Fermi Dirac functions, Watson functions

THE LIMITS TO GROWTH

A REPORT FOR THE CLUB OF ROME'S PROJECT ON THE PREDICAMENT OF MANKIND

PHYSICAL REVIEW

STATISTICAL PHYSICS, PLASMAS, FLUIDS, AND RELATED INTERDISCIPLINARY TOPICS. E

CK-12 CALCULUS

CK-12 Foundation CK-12 Foundation's Single Variable Calculus FlexBook introduces high school students to the topics covered in the Calculus AB course. Topics include: Limits, Derivatives, and Integration.

COLLEGE ALGEBRA

College Algebra provides a comprehensive exploration of algebraic principles and meets scope and sequence requirements for a typical introductory algebra course. The modular approach and richness of content ensure that the book meets the needs of a variety of courses. College Algebra offers a wealth of examples with detailed, conceptual explanations, building a strong foundation in the material before asking students to apply what they've learned. Coverage and Scope In determining the concepts, skills, and topics to cover, we engaged dozens of highly experienced instructors with a range of student audiences. The resulting scope and sequence proceeds logically while allowing for a significant amount of flexibility in instruction. Chapters 1 and 2 provide both a review and foundation for study of Functions that begins in Chapter 3. The authors recognize that while some institutions may find this material a prerequisite, other institutions have told us that they have a cohort that need the prerequisite skills built into the course. Chapter 1: Prerequisites Chapter 2: Equations and Inequalities Chapters 3-6: The Algebraic Functions Chapter 3: Functions Chapter 4: Linear Functions Chapter 5: Polynomial and Rational Functions Chapter 6: Exponential and Logarithm Functions Chapters 7-9: Further Study in College Algebra Chapter 7: Systems of Equations and Inequalities Chapter 8: Analytic Geometry Chapter 9: Sequences, Probability and Counting Theory

APPLIED CALCULUS

MATH, BETTER EXPLAINED

LEARN TO UNLOCK YOUR MATH INTUITION

Math, Better Explained is an intuitive guide to the math fundamentals. Learn math the way your teachers always wanted.

MATHEMATICS FOR THE IB DIPLOMA: HIGHER LEVEL WITH CD-ROM

Cambridge University Press This title forms part of the completely new Mathematics for the IB Diploma series. This highly illustrated coursebook, available in both print and e-book formats, has been written to specifically cover the new IB Higher Level syllabus. Based on the new group 5 aims, the progressive approach encourages cumulative learning. Features include: a dedicated chapter exclusively for combined exercises; plenty of worked examples; questions colour-coded according to grade; exam-style questions; feature boxes of hints and tips. The print book includes a CD-ROM providing a complete e-version of the book, all the options chapters, extension worksheets, prior learning sheets, calculator skills sheets and fill-in proofs. These additional materials are also included in the e-book version.

MATHEMATICAL MODELLING WITH CASE STUDIES

A DIFFERENTIAL EQUATIONS APPROACH USING MAPLE AND MATLAB, SECOND EDITION

CRC Press Focusing on growth and decay processes, interacting populations, and heating/cooling problems, *Mathematical Modelling with Case Studies: A Differential Equations Approach using Maple™ and MATLAB®, Second Edition* presents mathematical techniques applicable to models involving differential equations that describe rates of change. Although the authors concentrate on models involving differential equations, the ideas used can be applied to many other areas. The book carefully details the process of constructing a model, including the conversion of a seemingly complex problem into a much simpler one. It uses flow diagrams and word equations to aid in the model building process and to develop the mathematical equations. Employing theoretical, graphical, and computational tools, the authors analyze the behavior of the models under changing conditions. They discuss the validation of the models and suggest extensions to the models with an emphasis on recognizing the strengths and limitations of each model. Through applications and the tools of Maple™ and MATLAB®, this textbook provides hands-on model building skills. It develops, extends, and improves simple models as well as interprets the results.

3000 SOLVED PROBLEMS IN CALCULUS

Schaum's Outline Series This powerful problem-solver gives you 3,000 problems in calculus, fully solved step-by-step! From Schaum's, the originator of the solved-problem guide, and students' favorite with over 30 million study guides sold—this timesaver helps you master every type of calculus problem that you will face in your homework and on your tests, from inequalities to differential equations. Work the problems yourself, then check the answers, or go directly to the answers you need with a complete index. Compatible with any classroom text, Schaum's 3000 Solved Problems in Calculus is so complete it's the perfect tool for graduate or professional exam review!

ICEER2014-MCMaster DIGEST

Mohamed Bakr and Ahmed Elsharabasy International Conference on Engineering Education and Research

AN INTRODUCTION TO STOCHASTIC PROCESSES WITH APPLICATIONS TO BIOLOGY

CRC Press *An Introduction to Stochastic Processes with Applications to Biology, Second Edition* presents the basic theory of stochastic processes necessary in understanding and applying stochastic methods to biological problems in areas such as population growth and extinction, drug kinetics, two-species competition and predation, the spread of epidemics, and the genetics of inbreeding. Because of their rich structure, the text focuses on discrete and continuous time Markov chains and continuous time and state Markov processes. New to the Second Edition A new chapter on stochastic differential equations that extends the basic theory to multivariate processes, including multivariate forward and backward Kolmogorov differential equations and the multivariate Itô's formula The inclusion of examples and exercises from cellular and molecular biology Double the number of exercises and MATLAB® programs at the end of each chapter Answers and hints to selected exercises in the appendix Additional references from the literature This edition continues to provide an excellent introduction to the fundamental theory of stochastic processes, along with a wide range of applications from the biological sciences. To better visualize the dynamics of stochastic processes, MATLAB programs are provided in the chapter appendices.

METHODS, MODELS, AND COMPUTATION FOR MEDICAL INFORMATICS

IGI Global Regular developments in technology continue to influence the medical and healthcare fields as they interact with information and computer sciences by methods of acquisition and the storage and retrieval of information. *Methods, Models, and Computation for Medical Informatics* is a comprehensive collection of research on computational capabilities, prototypes, and algorithms, as well as application in the areas of nursing, clinical care, public health, biomedical research, and much more. This book provides a better understanding of the models and methods used in the field of medicine for researchers, practitioners, and medical professionals alike.

BRIEF CALCULUS

A GRAPHING CALCULATOR APPROACH

Wiley This user friendly, mathematically sound focuses on using the graphing calculator to explore new ideas which are validated by calculus methods, to create concepts using calculus and then support them with numerical or graphical techniques and to work a problem numerically or graphically because it cannot be solved by calculus procedures.

MATHEMATICAL MODELLING OF THE PANDEMIC OF 2019 NOVEL CORONAVIRUS (COVID-19): PATTERNS, DYNAMICS, PREDICTION, AND CONTROL

Frontiers Media SA

GRAPHICAL MODELS, EXPONENTIAL FAMILIES, AND VARIATIONAL INFERENCE

Now Publishers Inc The core of this paper is a general set of variational principles for the problems of computing marginal probabilities and modes, applicable to multivariate statistical models in the exponential family.

CLOTHESLINE MATH: THE MASTER NUMBER SENSE MAKER

THE MASTER NUMBER SENSE MAKER

Teacher Created Materials This must-have resource provides the theoretical groundwork for teaching number sense. Authored by Chris Shore, this e-book empowers teachers with the pedagogy, lessons, and detailed instructions to help them implement Clothesline Math in K-12 classrooms. Detailed, useful tips for facilitating the ensuing mathematical discourse are also included. At the elementary level, the hands-on lessons cover important math topics including whole numbers, place value, fractions, order of operations, algebraic reasoning, variables, and more. Implement Clothesline Math at the secondary level and provide students with hands-on learning and activities that teach advanced math topics including geometry, algebra, statistics, trigonometry, and pre-calculus. Aligned to state and national standards, this helpful resource will get students excited about learning math as they engage in meaningful discourse.

PHYSICS, PHARMACOLOGY AND PHYSIOLOGY FOR ANAESTHETISTS

KEY CONCEPTS FOR THE FRCA

Cambridge University Press A quick reference to basic science for anaesthetists, containing all the key information needed for FRCA exams.

A BIOLOGIST'S GUIDE TO MATHEMATICAL MODELING IN ECOLOGY AND EVOLUTION

Princeton University Press Thirty years ago, biologists could get by with a rudimentary grasp of mathematics and modeling. Not so today. In seeking to answer fundamental questions about how biological systems function and change over time, the modern biologist is as likely to rely on sophisticated mathematical and computer-based models as traditional fieldwork. In this book, Sarah Otto and Troy Day provide biology students with the tools necessary to both interpret models and to build their own. The book starts at an elementary level of mathematical modeling, assuming that the reader has had high school mathematics and first-year calculus. Otto and Day then gradually build in depth and complexity, from classic models in ecology and evolution to more intricate class-structured and probabilistic models. The authors provide primers with instructive exercises to introduce readers to the more advanced subjects of linear algebra and probability theory. Through examples, they describe how models have been used to understand such topics as the spread of HIV, chaos, the age structure of a country, speciation, and extinction. Ecologists and evolutionary biologists today need enough mathematical training to be able to assess the power and limits of biological models and to develop theories and models themselves. This innovative book will be an indispensable guide to the world of mathematical models for the next generation of biologists. A how-to guide for developing new mathematical models in biology Provides step-by-step recipes for constructing and analyzing models Interesting biological applications Explores classical models in ecology and evolution Questions at the end of every chapter Primers cover important mathematical topics Exercises with answers Appendixes summarize useful rules Labs and advanced material available

MATHEMATICS STANDARD LEVEL FOR IB DIPLOMA EXAM PREPARATION GUIDE

Cambridge University Press A new series of Exam Preparation guides for the IB Diploma Mathematics HL and SL and Mathematical Studies. This exam preparation guide for the IB Diploma Mathematics Standard Level course breaks the course down into chapters that summarise material and present revision questions by exam question type, so that revision can be highly focused to make best use of students' time. Students can stretch themselves to achieve their best with 'going for the top' questions for those who want to achieve the highest results. Worked solutions for all the mixed and 'going for the top' questions are included, plus exam hints throughout. Guides for Mathematics Higher Level and Mathematical Studies are also available.

THE R BOOK

John Wiley & Sons The high-level language of R is recognized as one of the most powerful and flexible statistical software environments, and is rapidly becoming the standard setting for quantitative analysis, statistics and graphics. R provides free access to unrivalled coverage and cutting-edge applications, enabling the user to apply numerous statistical methods ranging from simple regression to time series or multivariate analysis. Building on the success of the author's bestselling Statistics: An Introduction using

R, The R Book is packed with worked examples, providing an all inclusive guide to R, ideal for novice and more accomplished users alike. The book assumes no background in statistics or computing and introduces the advantages of the R environment, detailing its applications in a wide range of disciplines. Provides the first comprehensive reference manual for the R language, including practical guidance and full coverage of the graphics facilities. Introduces all the statistical models covered by R, beginning with simple classical tests such as chi-square and t-test. Proceeds to examine more advance methods, from regression and analysis of variance, through to generalized linear models, generalized mixed models, time series, spatial statistics, multivariate statistics and much more. The R Book is aimed at undergraduates, postgraduates and professionals in science, engineering and medicine. It is also ideal for students and professionals in statistics, economics, geography and the social sciences.

THE MATHEMATICS OF DIFFUSION

Oxford University Press Though it incorporates much new material, this new edition preserves the general character of the book in providing a collection of solutions of the equations of diffusion and describing how these solutions may be obtained.

HOLLAND-FREI CANCER MEDICINE CLOTH

John Wiley & Sons The original reference resource for medical oncologists, radiation oncologists, internists, and allied specialties involved in the treatment of cancer patients, Holland-Frei Cancer Medicine covers the ever-expanding field of current cancer science and clinical oncology practice. In this new ninth edition an outstanding editorial team from world-renowned medical centers continue to hone the leading edge forged in previous editions, with timely information on biology, immunology, etiology, epidemiology, prevention, screening, pathology, imaging, and therapy. Holland-Frei Cancer Medicine, Ninth Edition, brings scientific principles into clinical practice and is a testament to the ethos that innovative, comprehensive, multidisciplinary treatment of cancer patients must be grounded in a fundamental understanding of cancer biology. This ninth edition features hundreds of full color illustrations, photographs, tables, graphs and algorithms that enhance understanding of complex topics and make this text an invaluable clinical tool. Over 15 brand new chapters covering the latest advances, including chapters Cancer Metabolism, Bioinformatics, Biomarker Based Clinical Trial Design, Health Services Research and Survivorship bring this comprehensive resource up-to-date. Each chapter contains overview boxes, select references and other pedagogic features, designed to make the content easy to access and absorb. The full list of references for each chapter are available on the free Wiley Companion Digital Edition. Inside this completely updated Ninth Edition you'll find: A translational perspective throughout, integrating cancer biology with cancer management providing an in depth understanding of the disease An emphasis on multidisciplinary, research-driven patient care to improve outcomes and optimal use of all appropriate therapies Cutting-edge coverage of personalized cancer care, including molecular diagnostics and therapeutics Concise, readable, clinically relevant text with algorithms, guidelines and insight into the use of both conventional and novel drugs Free access to the Wiley Companion Digital Edition providing search across the book, full reference list with web links, downloadable illustrations and photographs, and post publication updates to key chapters Edited and authored by an international group of some of the best-known oncologists, cancer researchers, surgeons, pathologists, and other associated specialists in the world, and endorsed by the American Association of Cancer Research Holland-Frei Cancer Medicine offers a genuinely international view of cancer research and clinical oncology practice. Endorsed by the American Association of Cancer Research

FROM ATOMS TO GALAXIES

A CONCEPTUAL PHYSICS APPROACH TO SCIENTIFIC AWARENESS

CRC Press College students in the United States are becoming increasingly incapable of differentiating between proven facts delivered by scientific inquiry and the speculations of pseudoscience. In an effort to help stem this disturbing trend, From Atoms to Galaxies: A Conceptual Physics Approach to Scientific Awareness teaches heightened scientific acuity as it educates students about the physical world and gives them answers to questions large and small. Written by Sadri Hassani, the author of several mathematical physics textbooks, this work covers the essentials of modern physics, in a way that is as thorough as it is compelling and accessible. Some of you might want to know How did Galileo come to think about the first law of motion? . . . Did Newton actually discover gravity by way of an apple and an accident? Or maybe you have mulled over... . . . Is it possible for Santa Claus to deliver all his toys? . . . Is it possible to prove that Elvis does not visit Graceland every midnight? Or perhaps you've even wondered If ancient Taoism really parallels modern physics? . . . If psychoanalysis can actually be called a science? . . . How it is that some philosophies of science may imply that a 650-year-old woman can give birth to a child? No Advanced Mathematics Required A primary textbook for undergraduate students not majoring in physics, From Atoms to Galaxies examines physical laws and their consequences from a conceptual perspective that requires no advanced mathematics. It explains quantum physics, relativity, nuclear and particle physics, gauge theory, quantum field theory, quarks and leptons, and cosmology. Encouraging students to subscribe to proven causation rather than dramatic speculation, the book: Defines the often obscured difference between science and technology, discussing how this confusion taints both common culture and academic rigor Explores the various philosophies of science, demonstrating how errors in our understanding of scientific principles can adversely impact scientific awareness Exposes how pseudoscience and New Age mysticism advance unproven conjectures as dangerous alternatives to proven science Based on courses taught by the author for over 15 years, this textbook has been developed to raise the scientific awareness of the untrained reader who lacks a technical or mathematical background. To accomplish this, the book lays the foundation of the laws that govern our universe in a nontechnical way, emphasizing topics that excite the mind, namely those taken from modern physics, and exposing the abuses made of them by the New Age gurus and other mystagogues. It outlines the methods developed by physicists for the scientific investigation of nature, and contrasts them with those developed by the outsiders who claim to be the owners of scientific methodology. Each chapter includes essays, which use the material developed in that chapter to debunk misconceptions, clarify the nature of science, and explore the history of physics as it relates to the development of ideas. Noting the damage incurred by confusing science and technology, the book strives to help the reader to emphatically demarcate the two, while clearly demonstrating that science is the only element capable of advancing

technology.

SELF-SIMILAR GROUPS

American Mathematical Soc. The book studies the self-similarity phenomenon in group theory and shows its intimate relation with dynamical systems and more classical self-similar structures, such as fractals, Julia sets, and self-affine tilings. The relation is established through the notions of the iterated monodromy group and the limit space, which are the central topics of the book. A wide variety of examples and different applications of self-similar groups to dynamical systems and vice versa are discussed. It is shown in particular how Julia sets can be reconstructed from the respective iterated monodromy groups and that groups with exotic properties appear now not just as isolated examples but as naturally defined iterated monodromy groups of rational functions. The book is intended to be accessible, to a wide mathematical readership, including graduate students interested in group theory and dynamical systems.

THE MATH OF LIFE AND DEATH

7 MATHEMATICAL PRINCIPLES THAT SHAPE OUR LIVES

Scribner A brilliant and entertaining mathematician illuminates seven mathematical principles that shape our lives. "Kit Yates shows how our private and social lives are suffused by mathematics. Ignorance may bring tragedy or farce. This is an exquisitely interesting book. It's a deeply serious one too and, for those like me who have little math, it's delightfully readable." —Ian McEwan, author of *Atonement* "Kit Yates is a natural storyteller. Through fascinating stories and examples, he shows how maths is the beating heart of so much of modern life. An exciting new voice in the world of science communication." —Marcus du Sautoy, author of *The Music of the Primes* From birthdays to birth rates to how we perceive the passing of time, mathematical patterns shape our lives. But for those of us who left math behind in high school, the numbers and figures hurled at us as we go about our days can sometimes leave us scratching our heads and feeling as if we're fumbling through a mathematical minefield. In this eye-opening and extraordinarily accessible book, mathematician Kit Yates illuminates hidden principles that can help us understand and navigate the chaotic and often opaque surfaces of our world. In *The Math of Life and Death*, Yates takes us on a fascinating tour of everyday situations and grand-scale applications of mathematical concepts, including exponential growth and decay, optimization, statistics and probability, and number systems. Along the way he reveals the mathematical undersides of controversies over DNA testing, medical screening results, and historical events such as the Chernobyl disaster and the Amanda Knox trial. Readers will finish this book with an enlightened perspective on the news, the law, medicine, and history, and will be better equipped to make personal decisions and solve problems with math in mind, whether it's choosing the shortest checkout line at the grocery store or halting the spread of a deadly disease.

MATHEMATICS WITH APPLICATIONS FOR THE MANAGEMENT, LIFE, AND SOCIAL SCIENCES

Harcourt College Pub

POPULATION ECOLOGY

AN INTRODUCTION TO COMPUTER SIMULATIONS

John Wiley & Sons This carefully structured laboratory manual explores, by means of computer simulations, the key areas of population dynamics through time. Using simply presented exercises, it teaches the programming and analysing skills students need for creating their own models of population change. In this way, readers can contribute constructively to the conservation of endangered species and the control of pest species. Focus on biology rather than mathematical procedures Introduces new techniques and shortcuts gradually with carefully explained commands Includes an extensive glossary Undergraduates and postgraduates taking courses in population ecology, behavioural ecology and conservation will find this an ideal accompaniment.

CIVIC ENGAGEMENT AND POLITICS: CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

IGI Global Creating transparency between government and citizens through outreach and engagement initiatives is critical to promoting community development and is also an essential part of a democratic society. This can be achieved through a number of methods including public policy, urban development, artistic endeavors, and digital platforms. *Civic Engagement and Politics: Concepts, Methodologies, Tools, and Applications* is a vital reference source that examines civic engagement practices in social, political, and non-political contexts. As the world is now undergoing a transformation, interdisciplinary collaboration, participation, community-based participatory research, partnerships, and co-creation have become more common than focused domains. Highlighting a range of topics such as social media and politics, civic activism, and public administration, this multi-volume book is geared toward government officials, leaders, practitioners, policymakers, academicians, and researchers interested in active citizen participation and politics.

MATHEMATICS OF THE DISCRETE FOURIER TRANSFORM (DFT)

WITH AUDIO APPLICAITONS

Julius Smith

BIOLOGICAL WASTEWATER TREATMENT: PRINCIPLES, MODELING AND DESIGN

IWA Publishing The first edition of this book was published in 2008 and it went on to become IWA Publishing's bestseller. Clearly there was a need for it because over the twenty years prior to 2008, the knowledge and understanding of wastewater treatment had advanced extensively and moved away from empirically-based approaches to a fundamental first-principles approach based on chemistry, microbiology, physical and bioprocess engineering, mathematics and modelling. However the quantity, complexity and diversity of these new developments was overwhelming for young water professionals, particularly in developing countries without readily available access to advanced-level tertiary education courses in wastewater treatment. For a whole new generation of young scientists and engineers entering the wastewater treatment profession, this book assembled and integrated the postgraduate course material of a dozen or so professors from research groups around the world who have made significant contributions to the advances in wastewater treatment. This material had matured to the degree that it had been codified into mathematical models for simulation with computers. The first edition of the book offered, that upon completion of an in-depth study of its contents, the modern approach of modelling and simulation in wastewater treatment plant design and operation could be embraced with deeper insight, advanced knowledge and greater confidence, be it activated sludge, biological nitrogen and phosphorus removal, secondary settling tanks, or biofilm systems. However, the advances and developments in wastewater treatment have accelerated over the past 12 years since publication of the first edition. While all the chapters of the first edition have been updated to accommodate these advances and developments, some, such as granular sludge, membrane bioreactors, sulphur conversion-based bioprocesses and biofilm reactors which were new in 2008, have matured into new industry approaches and are also now included in this second edition. The target readership of this second edition remains the young water professionals, who will still be active in the field of protecting our precious water resources long after the aging professors who are leading some of these advances have retired. The authors, all still active in the field, are aware that cleaning dirty water has become more complex but that it is even more urgent now than 12 years ago, and offer this second edition to help the young water professionals engage with the scientific and bioprocess engineering principles of wastewater treatment science and technology with deeper insight, advanced knowledge and greater confidence built on stronger competence.