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Probability and Stochastic Processes-Roy D. Yates 2014-01-28 This text introduces engineering students to probability theory and stochastic processes. Along with thorough mathematical development of the subject, the book presents intuitive explanations of key points in order to give students the insights they need to apply math to practical engineering problems. The first seven chapters contain the core material that is essential to any introductory course. In one-semester undergraduate courses, instructors can select material from the remaining chapters to meet their individual goals. Graduate courses can cover all chapters in one semester.

Probability and Stochastic Processes: A Friendly Introduction for Electrical and Computer Engineers, 3rd Edition-Roy D. Yates 2014-01-06 In Probability and Stochastic Processes: A Friendly Introduction for Electrical and Computer Engineers, readers are able to grasp the concepts of probability and stochastic processes, and apply these in professional engineering practice. The 3rd edition also includes quiz solutions within the appendix of the text. The resource presents concepts clearly as a sequence of building blocks identified as an axiom, definition or theorem. This approach allows for a better understanding of the material, which can be utilized in solving practical problems.

Probability and Stochastic Processes-Roy D. Yates 2005 This user-friendly resource will help you grasp the concepts of probability and stochastic processes, so you can apply them in professional engineering practice. The book presents concepts clearly as a sequence of building blocks that are identified either as an axiom, definition, or theorem. This approach provides a better understanding of the material, which can be used to solve practical problems. Key Features: The text follows a single model that begins with an experiment consisting of a procedure and observations. The mathematics of discrete random variables appears separately from the mathematics of continuous random variables. Stochastic processes are introduced in Chapter 6, immediately after the presentation of discrete and continuous random variables. Subsequent material, including central limit theorem approximations, laws of large numbers, and statistical inference, then use examples that reinforce stochastic process concepts. An abundance of exercises are provided that help students learn how to put the theory to use.

Introduction to Probability and Stochastic Processes with Applications-Liliana Blanco Castañeda 2014-08-21 An easily accessible, real-world approach to probability andstochastic processes Introduction to Probability and Stochastic Processes withApplications presents a clear, easy-to-understand treatment ofprobability and stochastic processes, providing readers with asolid foundation they can build upon throughout their careers. Withan emphasis on applications in engineering, applied sciences,business and finance, statistics, mathematics, and operationsresearch, the book features numerous real-world examples thatillustrate how random phenomena occur in nature and how to useprobabilistic techniques to accurately model these phenomena. The authors discuss a broad range of topics, from the basicconcepts of probability to advanced topics for further study,including Itô integrals, martingales, and sigma algebras.Additional topical coverage includes: Distributions of discrete and continuous random variablesfrequently used in applications Random vectors, conditional probability, expectation, andmultivariate normal distributions The laws of large numbers, limit theorems, and convergence ofsequences of random variables Stochastic processes and related applications, particularly inqueueing systems Financial mathematics, including pricing methods such asrisk-neutral valuation and the Black-Scholes formula Extensive appendices containing a review of the requisitemathematics and tables of standard distributions for use inapplications are provided, and plentiful exercises, problems, andsolutions are found throughout. Also, a related website featuresadditional exercises with solutions and supplementary material forclassroom use. Introduction to Probability and StochasticProcesses with Applications is an ideal book for probabilitycourses at the upper-undergraduate level. The book is also avaluable reference for researchers and practitioners in the fieldsof engineering, operations research, and computer science whoconduct data analysis to make decisions in their everyday work.

Discrete Stochastic Processes-Robert G. Gallager 2012-12-06 Stochastic processes are found in probabilistic systems that evolve with time. Discrete stochastic processes change by only integer time steps (for some time scale), or are characterized by discrete occurrences at arbitrary times. Discrete Stochastic Processes helps the reader develop the understanding and intuition necessary to apply stochastic process theory in engineering, science and operations research. The book approaches the subject via many simple examples which build insight into the structure of stochastic processes and the general effect of these phenomena in real systems. The book presents mathematical ideas without recourse to measure theory, using only minimal mathematical analysis. In the proofs and explanations, clarity is favored over formal rigor, and simplicity over generality. Numerous examples are given to show how results fail to hold when all the conditions are not satisfied. Audience: An excellent textbook for a graduate level course in engineering and operations research. Also an invaluable reference for all those requiring a deeper understanding of the subject.

Probability and Random Processes for Electrical and Computer Engineers-John A. Gubner 2006-06-01 The theory of probability is a powerful tool that helps electrical and computer engineers to explain, model, analyze, and design the technology they develop. The text begins at the advanced undergraduate level, assuming only a modest knowledge of probability, and progresses through more complex topics mastered at graduate level. The first five chapters cover the basics of probability and both discrete and continuous random variables. The later chapters have a more specialized coverage, including random vectors, Gaussian random vectors, random processes, Markov Chains, and convergence. Describing tools and results that are used extensively in the field, this is more than a textbook; it is also a reference for researchers working in communications, signal processing, and computer network traffic analysis. With over 300 worked examples, some 800 homework problems, and sections for exam preparation, this is an essential companion for advanced undergraduate and graduate students. Further resources for this title, including solutions (for Instructors only), are available online at www.cambridge.org/9780521864701.

Wcs Probability & Stochastic Processes-Roy D. Yates 2002-03-01

An Introduction to Stochastic Modeling-Howard M. Taylor 2014-05-10 An Introduction to Stochastic Modeling provides information pertinent to the standard concepts and methods of stochastic modeling. This book presents the rich diversity of applications of stochastic processes in the sciences. Organized into nine chapters, this book begins with an overview of diverse types of stochastic models, which predicts a set of possible outcomes weighed by their likelihoods or probabilities. This text then provides exercises in the applications of simple stochastic analysis to appropriate problems. Other chapters consider the study of general functions of independent, identically distributed, nonnegative random variables representing the successive intervals between renewals. This book discusses as well the numerous examples of Markov branching processes that arise naturally in various scientific disciplines. The final chapter deals with queueing models, which aid the design process by predicting system performance. This book is a valuable resource for students of engineering and management science. Engineers will also find this book useful.

Probability and Stochastic Processes for Engineers-Carl W. Helstrom 1991

The Forgotten Army-Roy Yates 2001

Probability and Random Processes-Geoffrey Grimmett 2001-05-31 This textbook provides a wide-ranging and entertaining indroduction to probability and random processes and many of their practical applications. It includes many exercises and problems with solutions.

Introduction to Stochastic Processes, Second Edition-Gregory F. Lawler 2006-05-16 Emphasizing fundamental mathematical ideas rather than proofs, Introduction to Stochastic Processes, Second Edition provides quick access to important foundations of probability theory applicable to problems in many fields. Assuming that you have a reasonable level of computer literacy, the ability to write simple programs, and the access to software for linear algebra computations, the author approaches the problems and theorems with a focus on stochastic processes evolving with time, rather than a particular emphasis on measure theory. For those lacking in exposure to linear differential and difference equations, the author begins with a brief introduction to these concepts. He proceeds to discuss Markov chains, optimal stopping, martingales, and Brownian motion. The book concludes with a chapter on stochastic integration. The author supplies many basic, general examples and provides exercises at the end of each chapter. New to the Second Edition: Expanded chapter on stochastic integration that introduces modern mathematical finance Introduction of Girsanov transformation and the Feynman-Kac formula Expanded discussion of Itô's formula and the Black-Scholes formula for pricing options New topics such as Doob's maximal inequality and a discussion on self similarity in the chapter on Brownian motion Applicable to the fields of mathematics, statistics, and engineering as well as computer science, economics, business, biological science, psychology, and engineering, this concise introduction is an excellent resource both for students and professionals.

Recent Advances in Applied Probability-Ricardo Baeza-Yates 2006-02-28 Applied probability is a broad research area that is of interest to scientists in diverse disciplines in science and technology, including: anthropology, biology, communication theory, economics, epidemiology, finance, geography, linguistics, medicine, meteorology, operations research, psychology, quality control, sociology, and statistics. Recent Advances in Applied Probability is a collection of survey articles that bring together the work of leading researchers in applied probability to present current research advances in this important area. This volume will be of interest to graduate students and researchers whose research is closely connected to probability modelling and their applications. It is suitable for one semester graduate level research seminar in applied probability.

Studyguide for Probability and Stochastic Processes-Cram101 Textbook Reviews 2013-05 Never HIGHLIGHT a Book Again Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9780872893795. This item is printed on demand.

Stochastic Processes-Robert G. Gallager 2013-12-12 This definitive textbook provides a solid introduction to discrete and continuous stochastic processes, tackling a complex field in a way that instils a deep understanding of the relevant mathematical principles, and develops an intuitive grasp of the way these principles can be applied to modelling real-world systems. It includes a careful review of elementary probability and detailed coverage of Poisson, Gaussian and Markov processes with richly varied queuing applications. The theory and applications of inference, hypothesis testing, estimation, random walks, large deviations, martingales and investments are developed. Written by one of the world's leading information theorists, evolving over twenty years of graduate classroom teaching and enriched by over 300 exercises, this is an exceptional resource for anyone looking to develop their understanding of stochastic processes.

Studyguide for Probability and Stochastic Processes: A Friendly Introduction for Electrical and Computer Engineers by Yates, Roy D., ISBN 978111832456-Cram101 Textbook Reviews 2016-07-31 Never HIGHLIGHT a Book Again! Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9781118324561. This item is printed on demand.

Probability and Stochastic Processes-Ionut Florescu 2014-10-27 A comprehensive and accessible presentation of probability and stochastic processes with emphasis on key theoretical concepts and real-world applications With a sophisticated approach, Probability and Stochastic Processes successfully balances theory and applications in a pedagogical and accessible format. The book's primary focus is on key theoretical notions in probability to provide a foundation for understanding concepts and examples related to stochastic processes. Organized into two main sections, the book begins by developing probability theory with topical coverage on probability measure; random variables; integration theory; product spaces, conditional distribution, and conditional expectations; and limit theorems. The second part explores stochastic processes and related concepts including the Poisson process, renewal processes, Markov chains, semi-Markov processes, martingales, and Brownian motion. Featuring a logical combination of traditional and complex theories as well as practices, Probability and Stochastic Processes also includes: Multiple examples from disciplines such as business, mathematical finance, and engineering Chapter-by-chapter exercises and examples to allow readers to test their comprehension of the presented material A rigorous treatment of all probability and stochastic processes concepts An appropriate textbook for probability and stochastic processes courses at the upper-undergraduate and graduate level in mathematics, business, and electrical engineering, Probability and Stochastic Processes is also an ideal reference for researchers and practitioners in the fields of mathematics, engineering, and finance.

Probability and Random Processes-Scott L. Miller 2012 Miller and Childers have focused on creating a clear presentation of foundational concepts with specific applications to signal processing and communications, clearly the two areas of most interest to students and instructors in this course. It is aimed at graduate students as well as practicing engineers, and includes unique chapters on narrowband random processes and simulation techniques. The appendices provide a refresher in such areas as linear algebra, set theory, random variables, and more. Probability and Random Processes also includes applications in digital communications, information theory, coding theory, image processing, speech analysis, synthesis and recognition, and other fields. * Exceptional exposition and numerous worked out problems make the book extremely readable and accessible * The authors connect the applications discussed in class to the textbook * The new edition contains more real world signal processing and communications applications * Includes an entire chapter devoted to simulation techniques

Modeling Uncertainty-Moshe Dror 2002-01-31 Writing in honour of Sid Yakowitz, 50 internationally known scholars have collectively contributed 30 papers on modelling uncertainty to this volume. These include papers with a theoretical emphasis and others that focus on applications.

Probability, Random Variables, and Stochastic Processes-Athanasios Papoulis 2002 The fourth edition of Probability, Random Variables and Stochastic Processes has been updated significantly from the previous edition, and it now includes co-author S. Unnikrishna Pillai of Polytechnic University. The book is intended for a senior/graduate level course in probability and is aimed at students in electrical engineering, math, and physics departments. The authors' approach is to develop the subject of probability theory and stochastic processes as a deductive discipline and to illustrate the theory with basic applications of engineering interest. Approximately 1/3 of the text is new material--this material maintains the style and spirit of previous editions. In order to bridge the gap between concepts and applications, a number of additional examples have been added for further clarity, as well as several new topics.

Studyguide for Probability and Stochastic Processes-Cram101 Textbook Reviews 2016-07-31 Never HIGHLIGHT a Book Again! Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9781118808719. This item is printed on demand.

Tensor Methods in Statistics-P. McCullagh 2018-01-18 This book provides a systematic development of tensor methods in statistics, beginning with the study of multivariate moments and cumulants. The effect on moment arrays and on cumulant arrays of making linear or affine transformations of the variables is studied. Because of their importance in statistical theory, invariant functions of the cumulants are studied in some detail. This is followed by an examination of the effect of making a polynomial transformation of the original variables. The fundamental operation of summing over complementary set partitions is introduced at this stage. This operation shapes the notation and pervades much of the remainder of the book. The necessary lattice-theory is discussed and suitable tables of complementary set partitions are provided. Subsequent chapters deal with asymptotic approximations based on Edgeworth expansion and saddlepoint expansion. The saddlepoint expansion is introduced via the Legendre transformation of the cumulant generating function, also known as the conjugate function of the cumulant generating function. A recurring them is that, with suitably chosen notation, multivariate calculations are often simpler and more transparent than the corresponding univariate calculations. The final two chapters deal with likelihood ratio statistics, maximum likelihood estimation and the effect on inferences of conditioning on ancillary or approximately ancillary statistics. The Bartlett adjustment factor is derived in the general case and simplified for certain types of generalized linear models. Finally, Barndorff-Nielsen's formula for the conditional distribution of the maximum liklelihood estimator is derived and discussed. More than 200 Exercises are provided to illustrate the uses of tensor methodology.

The Math of Life and Death-Kit Yates 2021-04-27 "Few of us really appreciate the full power of math--the extent to which its influence is not only in every office and every home, but also in every courtroom and hospital ward. In this ... book, Kit Yates explores the true stories of life-changing events in which the application--or misapplication--of mathematics has played a critical role: patients crippled by faulty genes and entrepreneurs bankrupted by faulty algorithms; innocent victims of miscarriages of justice; and the unwitting victims of software glitches"--Publisher marketing.

PSPICE and MATLAB for Electronics-John Okyere Attia 2010-06-23 Used collectively, PSPICE and MATLAB are unsurpassed for circuit modeling and data analysis. PSPICE can perform DC, AC, transient, Fourier, temperature, and Monte Carlo analysis of electronic circuits with device models and subsystem subcircuits. MATLAB can then carry out calculations of device parameters, curve fitting, numerical integration, nume

Intuitive Probability and Random Processes using MATLAB®-Steven Kay 2006-03-20 Intuitive Probability and Random Processes using MATLAB® is an introduction to probability and random processes that merges theory with practice. Based on the author's belief that only "hands-on" experience with the material can promote intuitive understanding, the approach is to motivate the need for theory using MATLAB examples, followed by theory and analysis, and finally descriptions of "real-world" examples to acquaint the reader with a wide variety of applications. The latter is intended to answer the usual question "Why do we have to study this?" Other salient features are: *heavy reliance on computer simulation for illustration and student exercises *the incorporation of MATLAB programs and code segments *discussion of discrete random variables followed by continuous random variables to minimize confusion *summary sections at the beginning of each chapter *in-line equation explanations *warnings on common errors and pitfalls *over 750 problems designed to help the reader assimilate and extend the concepts Intuitive Probability and Random Processes using MATLAB® is intended for undergraduate and first-year graduate students in engineering. The practicing engineer as well as others having the appropriate mathematical background will also benefit from this book. About the Author Steven M. Kay is a Professor of Electrical Engineering at the University of Rhode Island and a leading expert in signal processing. He has received the Education Award "for outstanding contributions in education and in writing scholarly books and texts..." from the IEEE Signal Processing society and has been listed as among the 250 most cited researchers in the world in engineering.

Probabilistic Systems and Random Signals-Abraham H. Haddad 2006 In-depth mathematical treatment, including examples of real systems to explain many of the probabilistic models and the use of Matlab both in examples and problem assignments, ensures students can relate to the mathematical material in practical terms Unique applications--covering issues such as reliability, measurement errors, and arrival and departure of events in networks--provide students with a broader range of topical coverage.

Probability and Stochastic Processes-Roy D. Yates 2018-05-29

Probability Theory and Stochastic Processes with Applications (Second Edition)-Oliver Knill 2017-01-31 This second edition has a unique approach that provides a broad and wide introduction into the fascinating area of probability theory. It starts on a fast track with the treatment of probability theory and stochastic processes by providing short proofs. The last chapter is unique as it features a wide range of applications in other fields like Vlasov dynamics of fluids, statistics of circular data, singular continuous random variables, Diophantine equations, percolation theory, random Schrödinger operators, spectral graph theory, integral geometry, computer vision, and processes with high risk.Many of these areas are under active investigation and this volume is highly suited for ambitious undergraduate students, graduate students and researchers.

Probability, Statistics, and Random Processes For Electrical Engineering-Alberto Leon-Garcia 2011-11-21 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. This is the standard textbook for courses on probability and statistics, not substantially updated. While helping students to develop their problem-solving skills, the author motivates students with practical applications from various areas of ECE that demonstrate the relevance of probability theory to engineering practice. Included are chapter overviews, summaries, checklists of important terms, annotated references, and a wide selection of fully worked-out real-world examples. In this edition, the Computer Methods sections have been updated and substantially enhanced and new problems have been added.

Univariate Discrete Distributions-Norman L. Johnson 2005-10-03 This Set Contains: Continuous Multivariate Distributions, Volume 1, Models andApplications, 2nd Edition by Samuel Kotz, N. Balakrishnan andNormal L. Johnson Continuous Univariate Distributions, Volume 1, 2nd Editionby Samuel Kotz, N. Balakrishnan and Normal L. Johnson Continuous Univariate Distributions, Volume 2, 2nd Editionby Samuel Kotz, N. Balakrishnan and Normal L. Johnson Discrete Multivariate Distributions by Samuel Kotz, N.Balakrishnan and Normal L. Johnson Univariate Discrete Distributions, 3rd Edition by SamuelKotz, N. Balakrishnan and Normal L. Johnson Discover the latest advances in discrete distributionstheory The Third Edition of the critically acclaimedUnivariate Discrete Distributions provides a self-contained,systematic treatment of the theory, derivation, and application ofprobability distributions for count data. Generalized zeta-functionand q-series distributions have been added and are covered indetail. New families of distributions, including Lagrangian-typedistributions, are integrated into this thoroughly revised andupdated text. Additional applications of univariate discretedistributions are explored to demonstrate the flexibility of thispowerful method. A thorough survey of recent statistical literature drawsattention to many new distributions and results for the classicaldistributions. Approximately 450 new references along with severalnew sections are introduced to reflect the current literature andknowledge of discrete distributions. Beginning with mathematical, probability, and statisticalfundamentals, the authors provide clear coverage of the key topicsin the field, including: Families of discrete distributions Binomial distribution Poisson distribution Negative binomial distribution Hypergeometric distributions Logarithmic and Lagrangian distributions Mixture distributions Stopped-sum distributions Matching, occupancy, runs, and q-series distributions Parametric regression models and miscellanea Emphasis continues to be placed on the increasing relevance ofBayesian inference to discrete distribution, especially with regardto the binomial and Poisson distributions. New derivations ofdiscrete distributions via stochastic processes and random walksare introduced without unnecessarily complex discussions ofstochastic processes. Throughout the Third Edition, extensiveinformation has been added to reflect the new role ofcomputer-based applications. With its thorough coverage and balanced presentation of theoryand application, this is an excellent and essential reference forstatisticians and mathematicians.

Old World Roots of the Cherokee-Donald N. Yates 2014-01-10 Most histories of the Cherokee nation focus on its encounters with Europeans, its conflicts with the U. S. government, and its expulsion from its lands during the Trail of Tears. This work, however, traces the origins of the Cherokee people to the third century B.C.E. and follows their migrations through the Americas to their homeland in the lower Appalachian Mountains. Using a combination of DNA analysis, historical research, and classical philology, it uncovers the Jewish and Eastern Mediterranean ancestry of the Cherokee and reveals that they originally spoke Greek before adopting the Iroquoian language of their Haudenosaunee allies while the two nations dwelt together in the Ohio Valley.

Fundamentals of Probability-Saeed Ghahramani 2018-09-05 "The 4th edition of Ghahramani's book is replete with intriguing historical notes, insightful comments, and well-selected examples/exercises that, together, capture much of the essence of probability. Along with its Companion Website, the book is suitable as a primary resource for a first course in probability. Moreover, it has sufficient material for a sequel course introducing stochastic processes and stochastic simulation." --Nawaf Bou-Rabee, Associate Professor of Mathematics, Rutgers University Camden, USA "This book is an excellent primer on probability, with an incisive exposition to stochastic processes included as well. The flow of the text aids its readability, and the book is indeed a treasure trove of set and solved problems. Every sub-topic within a chapter is supplemented by a comprehensive list of exercises, accompanied frequently by self-quizzes, while each chapter ends with a useful summary and another rich collection of review problems." --Dalia Chakrabarty, Department of Mathematical Sciences, Loughborough University, UK "This textbook provides a thorough and rigorous treatment of fundamental probability, including both discrete and continuous cases. The book's ample collection of exercises gives instructors and students a great deal of practice and tools to sharpen their understanding. Because the definitions, theorems, and examples are clearly labeled and easy to find, this book is not only a great course accompaniment, but an invaluable reference." --Joshua Stangle, Assistant Professor of Mathematics, University of Wisconsin – Superior, USA This one- or two-term calculus-based basic probability text is written for majors in mathematics, physical sciences, engineering, statistics, actuarial science, business and finance, operations research, and computer science. It presents probability in a natural way: through interesting and instructive examples and exercises that motivate the theory, definitions, theorems, and methodology. This book is mathematically rigorous and, at the same time, closely matches the historical development of probability. Whenever appropriate, historical remarks are included, and the 2096 examples and exercises have been carefully designed to arouse curiosity and hence encourage students to delve into the theory with enthusiasm. New to the Fourth Edition: 538 new examples and exercises have been added, almost all of which are of applied nature in realistic contexts Self-quizzes at the end of each section and self-tests at the end of each chapter allow students to check their comprehension of the material An all-new Companion Website includes additional examples, complementary topics not covered in the previous editions, and applications for more in-depth studies, as well as a test bank and figure slides. It also includes complete solutions to all self-test and self-quiz problems Saeed Ghahramani is Professor of Mathematics and Dean of the College of Arts and Sciences at Western New England University. He received his Ph.D. from the University of California at Berkeley in Mathematics and is a recipient of teaching awards from Johns Hopkins University and Towson University. His research focuses on applied probability, stochastic processes, and queuing theory.

Electrical Energy Conversion and Transport-George G. Karady 2013-05-03 Designed to support interactive teaching and computer assisted self-learning, this second edition of Electrical Energy Conversion and Transport is thoroughly updated to address the recent environmental effects of electric power generation and transmission, which have become more important together with the deregulation of the industry. New content explores different power generation methods, including renewable energy generation (solar, wind, fuel cell) and includes new sections that discuss the upcoming Smart Grid and the distributed power generation using renewable energy generation, making the text essential reading material for students and practicing engineers.

Probability and Stochastic Processes-Roy D. Yates 2006

Fundamentals of Digital Communication-Upamanyu Madhow 2008-03-06 This is a concise presentation of the concepts underlying the design of digital communication systems, without the detail that can overwhelm students. Many examples, from the basic to the cutting-edge, show how the theory is used in the design of modern systems and the relevance of this theory will motivate students. The theory is supported by practical algorithms so that the student can perform computations and simulations. Leading edge topics in coding and wireless communication make this an ideal text for students taking just one course on the subject. Fundamentals of Digital Communications has coverage of turbo and LDPC codes in sufficient detail and clarity to enable hands-on implementation and performance evaluation, as well as 'just enough' information theory to enable computation of performance benchmarks to compare them against. Other unique features include space-time communication and geometric insights into noncoherent communication and equalization.

Random Processes for Engineers-Bruce Hajek 2015-03-12 This engaging introduction to random processes provides students with the critical tools needed to design and evaluate engineering systems that must operate reliably in uncertain environments. A brief review of probability theory and real analysis of deterministic functions sets the stage for understanding random processes, whilst the underlying measure theoretic notions are explained in an intuitive, straightforward style. Students will learn to manage the complexity of randomness through the use of simple classes of random processes, statistical means and correlations, asymptotic analysis, sampling, and effective algorithms. Key topics covered include: • Calculus of random processes in linear systems • Kalman and Wiener filtering • Hidden Markov models for statistical inference • The estimation maximization (EM) algorithm • An introduction to martingales and concentration inequalities. Understanding of the key concepts is reinforced through over 100 worked examples and 300 thoroughly tested homework problems (half of which are solved in detail at the end of the book).

Probability and Statistics for Engineers and Scientists-Ronald E. Walpole 2016-01 This classic text provides a rigorous introduction to basic probability theory and statistical inference, illustrated by relevant applications. It assumes a background in calculus and offers a balance of theory and methodology.

Introduction to Probability and Statistics Using R-G. Jay Kerns 2010

Engineering Electromagnetics-Umran S. Inan 1999 Engineering Electromagnetics provides a solid foundation in electromagnetics fundamentals by emphasizing physical understanding and practical applications. Electromagnetics, with its requirements for abstract thinking, can prove challenging for students. The authors' physical and intuitive approach has produced a book that will inspire enthusiasm and interest for the material. Benefiting from a review of electromagnetic curricula at several schools and repeated use in classroom settings, this text presents material in a rigorous yet readable manner. FEATURES/BENEFITS Starts with coverage of transmission lines before addressing fundamental laws, providing a smooth transition from circuits to electromagnetics. Emphasizes physical understanding and the experimental bases of fundamental laws. Offers detailed examples and numerous practical end-of-chapter problems, with each problem's topical content clearly identified. Provides historical notes, abbreviated biographies, and hundreds of footnotes to motivate interest and enhance understanding. Back Cover Benefiting from a review of electromagnetics curricula at several schools and repeated use in classroom settings, this text presents material in a comprehensive and practical yet readable manner. Features: Starts with coverage of transmission lines before addressing fundamental laws, providing a smooth transition from circuits to electromagnetics. Emphasizes physical understanding and the experimental bases of fundamental laws. Offers detailed examples and numerous practical end-of-chapter problems, with each problem's topical content clearly identified. Provides historical notes, abbreviated biographies, and hundreds of footnotes to motivate interest and enhance understanding.

Fundamentals of Applied Probability and Random Processes-Oliver Ibe 2014-06-13 The long-awaited revision of Fundamentals of Applied Probability and Random Processes expands on the central components that made the first edition a classic. The title is based on the premise that engineers use probability as a modeling tool, and that probability can be applied to the solution of engineering problems. Engineers and students studying probability and random processes also need to analyze data, and thus need some knowledge of statistics. This book is designed to provide students with a thorough grounding in probability and stochastic processes, demonstrate their applicability to real-world problems, and introduce the basics of statistics. The book's clear writing style and homework problems make it ideal for the classroom or for self-study. Demonstrates concepts with more than 100 illustrations, including 2 dozen new drawings Expands readers' understanding of disruptive statistics in a new chapter (chapter 8) Provides new chapter on Introduction to Random Processes with 14 new illustrations and tables explaining key concepts. Includes two chapters devoted to the two branches of statistics, namely descriptive statistics (chapter 8) and inferential (or inductive) statistics (chapter 9).

