Klugman Understanding Actuarial Practice

This book explains what actuaries are, what they do, and where they do it. It describes the ideas, techniques, and skills involved in the day-to-day work of actuaries. This second edition has been updated to reflect the rise of social networking and the internet, the progress toward a global knowledge-based economy, and the global expansion of the actuarial field that has occurred since the first edition. --from publisher description

The increasing complexity of insurance and reinsurance products has seen a growing interest amongst actuaries in the modelling of dependent risks. For efficient risk management, actuaries need to be able to answer fundamental questions such as: Is the correlation structure dangerous? And, if yes, to what extent? Therefore tools to quantify, compare, and model the strength of dependence between different risks are vital. Combining coverage of stochastic order and risk measure theories with the basics of risk management and stochastic dependence, this book provides an essential guide to managing modern financial risk. * Describes how to model risks in incomplete markets, emphasising insurance risks. * Explains how to measure and compare the danger of risks, model their interactions, and measure the strength of their association. * Examines the type of dependence induced by GLM-based credibility models, the bounds on functions of dependent risks, and probabilistic distances between actuarial models. * Detailed presentation of risk measures, stochastic orderings, copula models, dependence concepts and dependence orderings. * Includes numerous exercises allowing a cementing of the concepts by all levels of readers. * Solutions to tasks as well as further examples and exercises can be found on a supporting website. An invaluable reference for both academics and practitioners alike, Actuarial Theory for Dependent Risks will appeal to all those eager to master the up-to-date modelling tools for dependent risks. The inclusion of exercises and practical examples makes the book suitable for advanced courses on risk management in incomplete markets. Traders looking for practical advice on insurance markets will also find much of interest.

The ultimate guide to maximizing shareholder value through ERM The first book to introduce an emerging approach synthesizing ERM and value-based management, Corporate Value of Enterprise Risk Management clarifies ERM as a strategic business management approach that enhances strategic planning and other decision-making processes. A hot topic in the wake of a series of corporate scandals as well as the financial crisis Looks at ERM as a way to deliver on the promise of balancing risk and return A practical guide for corporate Chief Risk Officers (CROs) and other business professionals seeking to successfully implement ERM ERM is here to stay. Sharing his unique insights and experiences as a recognized global thought leader in this field, author Sim Segal offers world-class guidance on how your business can successfully implement ERM to protect and increase shareholder value.

List of members for the years 1914-20 are included in v. 1-7, after which they are continued in the Year book of the society, begun in 1922.

This must-have manual provides detailed solutions to all of the 200+ exercises in Dickson, Hardy and Waters' Actuarial Mathematics for Life Contingent Risks, Second Edition. This groundbreaking text on the modern mathematics of life insurance is required reading for the Society of Actuaries' Exam MLC and also provides a solid preparation for the life contingencies material of the UK actuarial profession's exam CT5. Beyond the professional examinations, the textbook and solutions manual offer readers the opportunity to develop insight and understanding, and also offer practical advice for solving problems using straightforward, intuitive numerical methods. Companion spreadsheets illustrating these techniques are available for free download.

Understanding Actuarial Practice

All property and casualty insurers are required to carry out loss reserving as a statutory accounting function. Thus, loss reserving is an essential sphere of activity, and one with its own specialized body of knowledge. While few books have been devoted to the topic, the amount of published research literature on loss reserving has almost doubled in size during the last fifteen years. Greg Taylor's book aims to provide a comprehensive, state-of-the-art treatment of loss reserving that reflects contemporary research advances to date. Divided into two parts, the book covers both the conventional techniques widely used in practice, and more specialized loss reserving techniques employing stochastic models. Part I, Deterministic Models, covers very practical issues through the abundant use of numerical examples that fully develop the techniques under consideration. Part II, Stochastic Models, begins with a chapter that sets up the additional theoretical material needed to illustrate stochastic modeling. The remaining chapters in Part II are self-contained, and thus can be approached independently of each other. A special feature of the book is the use throughout of a single real life data set to illustrate the numerical examples and new techniques presented. The data set illustrates most of the difficult situations presented in actuarial practice. This book will meet the needs for a reference work as well as for a textbook on loss reserving.

In this newly revised book, Harold L. Vogel examines the business economics of the major entertainment enterprises: movies, music, television programming, broadcasting, cable, casino gambling and wagering, publishing, performing arts, sports, theme parks, and toys and games. The seventh edition has been further revised and broadened and differs from its predecessors by restructuring and repositioning the previous Internet chapter, including new material on the economics of networks and advertising, adding a new section on policy implications, and further expanding the section on recent theoretical work pertaining to box-office behaviour. The result is a comprehensive up-to-date reference guide on the economics, financing, production, and marketing of entertainment in the United States and overseas. Investors, business executives, accountants, lawyers, arts administrators, and general readers will find that the book offers an invaluable guide to how entertainment industries operate.

Modern Actuarial Risk Theory contains what every actuary needs to know about non-life insurance mathematics. It starts with the standard material like utility theory, individual and collective model and basic ruin theory. Other topics are risk measures and premium principles, bonus-malus systems, ordering of risks and credibility theory. It also contains some chapters about Generalized Linear Models, applied to rating and IBNR problems. As to the level of the mathematics, the book would fit in a bachelors or masters program in quantitative economics or mathematical statistics. This second and.

Since 1990, the social and economic policies of the transition countries of central and eastern Europe, the Caucasus and central Asia have diverged, including the way they have reformed the financing of their health systems. This book analyses this rich experience in a systematic way. It reviews the background to health financing systems and reform in these countries, starting with the legacy of the systems in the USSR and central and eastern Europe before 1990 and the consequences (particularly fiscal) of the transition for their organization and performance. From practical experience of implementing, advising or evaluating health financing policies in the region, the authors offer important lessons, as well as pitfalls to avoid in the reform process. This book is essential reading for health finance policy-makers, advisers and analysts in this region and beyond.

A Hands-On Approach to Understanding and Using Actuarial Models Computational Actuarial Science with R provides an introduction to the computational aspects of actuarial science. Using simple R code, the book helps you understand the algorithms involved in actuarial computations. It also covers more advanced topics, such as parallel computing and C/C++ embedded codes. After an introduction to the R language, the book is divided into four parts. The first one addresses methodology and statistical modeling issues. The second part discusses the computational facets of life insurance, including life contingencies calculations and prospective life tables. Focusing on finance from an actuarial perspective, the next part presents techniques for modeling stock prices, nonlinear time series, yield curves, interest rates, and portfolio optimization. The last part explains how to use R to deal with computational issues of nonlife insurance. Taking a do-it-yourself approach to understanding algorithms, this book demystifies the computational aspects of actuarial science. It shows that even complex computations can usually be done without too much trouble. Datasets used in the text are available in an R package (CASdatasets).

This book provides a comprehensive introduction to actuarial mathematics, covering both deterministic and stochastic models of life contingencies, as well as more advanced topics such as risk theory, credibility theory and multi-state models. This new edition includes additional material on credibility theory, continuous time multi-state models, more complex types of contingent insurances, flexible contracts such as universal life, the risk measures VaR and TVaR. Key Features: Covers much of the syllabus material on the modeling examinations of the Society of Actuaries, Canadian Institute of Actuaries and the Casualty Actuarial Society. (SOA-CIA exams MLC and C, CSA exams 3L and 4.) Extensively revised and updated with new material. Orders the topics specifically to facilitate learning. Provides a streamlined approach to actuarial notation. Employs modern computational methods. Contains a variety of exercises, both computational and theoretical, together with answers, enabling use for self-study. An ideal text for students planning for a professional career as actuaries, providing a solid preparation for the modeling examinations of the major North American actuarial associations. Furthermore, this book is highly suitable reference for those wanting a sound introduction to the subject, and for those working in insurance, annuities and pensions.

In the years since the publication of the best-selling first edition, the incorporation of ideas and theories from the rapidly growing field of financial economics has precipitated considerable development of thinking in the actuarial profession. Modern Actuarial Theory and Practice, Second Edition integrates those changes and presents an up-to-date, comprehensive overview of UK and international actuarial theory, practice and modeling. It describes all of the traditional areas of actuarial activity, but in a manner that highlights the fundamental principles of actuarial theory and practice as well as their economic, financial, and statistical foundations.

This book teaches multiple regression and time series and how to use these to analyze real data in risk management and finance.

Based on the research that has been conducted at Wharton Risk Management Center over the past five years on catastrophic risk. Covers a hot topic in the light of recent terroristic activities and nature catastrophes. Develops risk management strategies for reducing and spreading the losses from future disasters. Provides glossary of definitions and terms used throughout the book.

New required text for the FAP Modules, as of January 31, 2012. A critical point in an actuary's education is the transition from understanding the mathematical underpinnings of actuarial science to putting them into practice. The problems become less well-defined and the solutions less clear-cut. Understanding Actuarial Practice is designed to aid that transition in four of the areas in which actuaries practice: investments, life insurance and annuities, retirement benefits, and health insurance. In each area students are introduced to the products that are delivered in each area and the relevant methods with regard to pricing, reserving and funding. Examples are supported by readily available spreadsheets and there are numerous exercises that reinforce the concepts. While written expressly for use in the Society of Actuaries Fundamentals of Actuarial Practice Course, this book is a valuable resource for anyone who desires to learn how actuarial principles are put into practice.

Devoted to the problem of fitting parametric probability distributions to data, this treatment uniquely unifies loss modeling in one book. Data sets used are related to the insurance industry, but can be applied to other distributions. Emphasis is on the distribution of single losses related to claims made against various types of insurance policies. Includes five sets of insurance data as examples.

Understand Up-to-Date Statistical Techniques for Financial and Actuarial ApplicationsSince the first edition was published, statistical techniques, such as reliability measurement, simulation, regression, and Markov chain modeling, have become more prominent in the financial and actuarial industries. Consequently, practitioners and students must ac

A comprehensive account of economic size distributions around the world and throughout the years In the course of the past 100 years, economists and applied statisticians have developed a remarkably diverse variety of income distribution models, yet no single resource convincingly accounts for all of these models, analyzing their strengths and weaknesses, similarities and differences. Statistical Size Distributions in Economics and Actuarial Sciences is the first collection to systematically investigate a wide variety of parametric models that deal with income, wealth, and related notions. Christian Kleiber and Samuel Kotz survey, compliment, compare, and unify all of the disparate models of income distribution, highlighting at times a lack of coordination between them that can result in unnecessary duplication. Considering models from eight languages and all continents, the authors discuss the social and economic implications of each as well as distributions of size of loss in actuarial applications. Specific models covered include: Pareto distributions Lognormal distributions Gamma-type size distributions Beta-type size distributions Miscellaneous size distributions Three appendices provide brief biographies of some of the leading players along with the basic properties of each of the distributions. Actuaries, economists, market researchers, social scientists, and physicists interested in econophysics will find Statistical Size Distributions in Economics and Actuarial Sciences to be a truly one-of-a-kind addition to the professional literature.

Statistical and Probabilistic Methods in Actuarial Science covers many of the diverse methods in applied probability and statistics for students aspiring to careers in insurance,

actuarial science, and finance. The book builds on students' existing knowledge of probability and statistics by establishing a solid and thorough understanding of
The debate between the proponents of "classical" and "Bayesian" statistica} methods continues unabated. It is not the purpose of the text to resolve those issues but rather to demonstrate that within the realm of actuarial science there are a number of problems that are particularly suited for Bayesian analysis. This has been apparent to actuaries for a long time, but the lack of adequate computing power and appropriate algorithms had led to the use of various approximations. The two greatest advantages to the actuary of the Bayesian approach are that the method is independent of the model and that interval estimates are as easy to obtain as point estimates. The former attribute means that once one learns how to analyze one problem, the solution to similar, but more complex, problems will be no more difficult. The second one takes on added significance as the actuary of today is expected to provide evidence concerning the quality of any estimates. While the examples are all actuarial in nature, the methods discussed are applicable to any structured estimation problem. In particular, statisticians will recognize that the basic credibility problem has the same setting as the random effects model from analysis of variance.

Developing techniques for assessing various risks and calculating probabilities of ruin and survival are exciting topics for mathematically-inclined academics. For practicing actuaries and financial engineers, the resulting insights have provided enormous opportunities but also created serious challenges to overcome, thus facilitating closer cooperation between industries and academic institutions. In this book, several renown researchers with extensive interdisciplinary research experiences share their thoughts that, in one way or another, contribute to the betterment of practice and theory of decision making under uncertainty. Behavioral, cultural, mathematical, and statistical aspects of risk assessment and modelling have been explored, and have been often illustrated using real and simulated data. Topics range from financial and insurance risks to security-type risks, from one-dimensional to multi- and even infinite-dimensional risks. The articles in the book were written with a broad audience in mind and should provide enjoyable reading for those with university level degrees and/or those who have studied for accreditation by various actuarial and financial societies.

This class-tested undergraduate textbook covers the entire syllabus for Exam C of the Society of Actuaries (SOA).

The updated third edition of the definitive text on health social work Thoroughly revised and updated, the third edition of Handbook of Health Social Work is an authoritative text that offers a comprehensive review of the diverse field of health social work. With contributions from a panel of international experts in the field, the book is theory driven and solidly grounded in evidence-based practice. The contributors explore both the foundation of social work practice and offer guidance on effective strategies, policies, and program development. The text provides information that is essential to the operations of social workers in health care including the conceptual underpinnings and the development of the profession. The authors explore the practice issues such as theories of health behavior, assessment, communication and the intersections between health and mental health. The authors also examine a wide range of examples of social work practices including settings that involve older adults, nephrology, oncology, and chronic diseases such as diabetes, heart disease, HIV/AIDS, genetics, end of life care, pain management and palliative care, as well as alternative treatments, and traditional healers. This is the only handbook of its kind to unite the body of health social work and: • Offers a wellness, rather than psychopathological perspective and contains treatment models that are evidence-based • Includes learning exercises, further resources, research suggestions, and life-course information. • Contains new chapters on topics such as international health, insurance and payment systems, and implementation of evidence-based practice • Presents information on emerging topics such as health policy in an age of reform, and genomics and the social environment • Reviews new trends in social work and health care including genetics, trans-disciplinary care, and international, national, and state changes in policy Written for social work educators, administrators, students, and practitioners, the revised third edition of Handbook of Health Social Work offers in one volume the entire body of health social work knowledge.

The Federal Emergency Management Agency's (FEMA) Federal Insurance and Mitigation Administration (FIMA) manages the National Flood Insurance Program (NFIP), which is a cornerstone in the U.S. strategy to assist communities to prepare for, mitigate against, and recover from flood disasters. The NFIP was established by Congress with passage of the National Flood Insurance Act in 1968, to help reduce future flood damages through NFIP community floodplain regulation that would control development in flood hazard areas, provide insurance for a premium to property owners, and reduce federal expenditures for disaster assistance. The flood insurance is available only to owners of insurable property located in communities that participate in the NFIP. Currently, the program has 5,555,915 million policies in 21,881 communities3 across the United States. The NFIP defines the one percent annual chance flood (100-year or base flood) floodplain as a Special Flood Hazard Area (SFHA). The SFHA is delineated on FEMA's Flood Insurance Rate Maps (FIRM's) using topographic, meteorologic, hydrologic, and hydraulic information. Property owners with a federally back mortgage within the SFHAs are required to purchase and retain flood insurance, called the mandatory flood insurance purchase requirement (MPR). Levees and floodwalls, hereafter referred to as levees, have been part of flood management in the United States since the late 1700's because they are relatively easy to build and a reasonable infrastructure investment. A levee is a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding. A levee system is a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices. Recognizing the need for improving the NFIP's treatment of levees, FEMA officials approached the National Research Council's (NRC) Water Science and Technology Board (WSTB) and requested this study. The NRC responded by forming the ad hoc Committee on Levee and the National Flood Insurance Program: Improving Policies and Practices, charged to examine current FEMA treatment of levees within the NFIP and provide advice on how those levee-elated policies and activities could be improved. The study addressed four broad areas, risk analysis, flood insurance, risk reduction, and risk communication, regarding how levees are considered in the NFIP. Specific issues within these areas include current risk analysis and mapping procedures behind accredited and non-accredited levees, flood insurance pricing and the mandatory flood insurance purchase requirement, mitigation options to reduce risk for communities with levees, flood risk communication efforts, and the concept of shared responsibility. The principal conclusions and recommendations are highlighted in this report.

This report examines the links between inequality and other major global trends (or megatrends), with a focus on technological change, climate change, urbanization and international migration. The analysis pays particular attention to poverty and labour market trends, as they mediate the distributional impacts of the major trends selected. It also provides policy recommendations to manage these megatrends in an equitable manner and considers the policy implications, so as to reduce inequalities and support their implementation.

In this book Steven Shavell provides an in-depth analysis and synthesis of the economic approach to the building blocks of our legal system, namely, property law, tort law, contract law, and criminal law. He also examines the litigation process as well as welfare economics and morality. Aimed at a broad audience, this book requires neither a legal background nor technical economics or mathematics to

understand it. Because of its breadth, analytical clarity, and general accessibility, it is likely to serve as a definitive work in the economic analysis of law.

A comprehensive guide to investment guarantees in equity-linked life insurance Due to the convergence of financial and insurance markets, new forms of investment guarantees are emerging which require financial service professionals to become savvier in modeling and risk management. With chapters that discuss stock return models, dynamic hedging, risk measures, Markov Chain Monte Carlo estimation, and much more, this one-stop reference contains the valuable insights and proven techniques that will allow readers to better understand the theory and practice of investment guarantees and equity-linked insurance policies. Mary Hardy, PhD (Waterloo, Ontario, Canada), is an Associate Professor and Associate Chair of Actuarial Science at the University of Waterloo and is a Fellow of the Institute of Actuaries and an Associate of the Society of Actuaries, where she is a frequent speaker. Her research covers topics in life insurance solvency and risk management, with particular emphasis on equity-linked insurance. Hardy is an Associate Editor of the North American Actuarial Journal and the ASTIN Bulletin and is a Deputy Editor of the British Actuarial Journal.

Cryptography plays a key role in ensuring the privacy and integrity of data and the security of computer networks. Introduction to Modern Cryptography provides a rigorous yet accessible treatment of modern cryptography, with a focus on formal definitions, precise assumptions, and rigorous proofs. The authors introduce the core principles of modern cryptography, including the modern, computational approach to security that overcomes the limitations of perfect secrecy. An extensive treatment of private-key encryption and message authentication follows. The authors also illustrate design principles for block ciphers, such as the Data Encryption Standard (DES) and the Advanced Encryption Standard (AES), and present provably secure constructions of block ciphers from lower-level primitives. The second half of the book focuses on public-key cryptography, beginning with a self-contained introduction to the number theory needed to understand the RSA, Diffie-Hellman, El Gamal, and other cryptosystems. After exploring public-key encryption and digital signatures, the book concludes with a discussion of the random oracle model and its applications. Serving as a textbook, a reference, or for self-study, Introduction to Modern Cryptography presents the necessary tools to fully understand this fascinating subject.

This is the only book actuaries need to understand generalized linear models (GLMs) for insurance applications. GLMs are used in the insurance industry to support critical decisions. Until now, no text has introduced GLMs in this context or addressed the problems specific to insurance data. Using insurance data sets, this practical, rigorous book treats GLMs, covers all standard exponential family distributions, extends the methodology to correlated data structures, and discusses recent developments which go beyond the GLM. The issues in the book are specific to insurance data, such as model selection in the presence of large data sets and the handling of varying exposure times. Exercises and data-based practicals help readers to consolidate their skills, with solutions and data sets given on the companion website. Although the book is package-independent, SAS code and output examples feature in an appendix and on the website. In addition, R code and output for all the examples are provided on the website.

This book presents a complete discussion of life insurance distribution. It begins by putting life insurance distribution within the broader context of distribution and marketing in general, thus demonstrating why life insurance distribution is different. It then goes on to discuss the history of how distribution, as we know it today, developed, and the ten primary distribution channels that exist in the business. With all of this as background, the book continues with more detail and discusses the various functions performed by distribution, and how distribution systems are managed today. It also goes into more specifics regarding the compensation and the economics of distribution. The text concludes with a discussion of managing distribution channel conflict, and how distribution of life insurance is expected to evolve in the near future. Spreadsheet models are available on the ACTEX website to assist readers in understanding the economics of distribution.

The creative and science-driven design of the point of sale has become a crucial success factor for both retailers and service businesses. In the newly revised and expanded edition of this book, you will learn some of the shopper marketing secrets from the authors about how you can design your store to increase sales and delight shoppers at the same time. By the time you are through reading, you will have learned how shoppers navigate the store, how they search for products, and how you can make them find the products you want them to see. You will also be able to appeal to shopper emotions through the use of colors, scents, and music, as well as make shopping memorable and fun by creating unique experiences for your shoppers. The focus is on the practical applicability of the concepts discussed, and this accessible book is firmly grounded in consumer and psychological research. At the end of each chapter, you will find several takeaway points. The book concludes with the “Store Design Cookbook,” full of ready-to-serve recipes for your own store design and visual merchandising process.

This text covers the actuarial principles and techniques used in finance and insurance including probability models, financial mathematics, non-life insurance, pensions, wealth management, and economics and accounting as applied to the financial and actuarial management of risk based products such as life insurance. It is an introductory text for students with a strong interest and ability in mathematics who wish to understand the modelling of insurance and financial risk and actuarial techniques.