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KEY=PHYSICS - ADRIEL CASSIDY

CLIMATE CHANGE

THE SCIENCE, IMPACTS AND SOLUTIONS

CSIRO PUBLISHING *It is widely accepted in the scientific community that climate change is a reality, and that changes are happening with increasing rapidity. In this second edition, leading climate researcher Barrie Pittock revisits the effects that global warming is having on our planet, in light of ever-evolving scientific research. Presenting all sides of the arguments about the science and possible remedies, Pittock examines the latest analyses of climate change, such as new and alarming observations regarding Arctic sea ice, the recently published IPCC Fourth Assessment Report, and the policies of the new Australian Government and how they affect the implementation of climate change initiatives. New material focuses on massive investments in large-scale renewables, such as the kind being taken up in California, as well as many smaller-scale activities in individual homes and businesses which are being driven by both regulatory and market mechanisms. The book includes extensive endnotes with links to ongoing and updated information, as well as some new illustrations. While the message is clear that climate change is here (and in some areas, might already be having disastrous effects), there is still hope for the future, and the ideas presented here will inspire people to take action. Climate Change: The Science, Impacts and Solutions is an important reference for students in environmental or social sciences, policy makers, and people who are genuinely concerned about the future of our environment.*

HOW TO BUILD A DIGITAL LIBRARY

Morgan Kaufmann *How to Build a Digital Library reviews knowledge and tools to construct and maintain a digital library, regardless of the size or purpose. A resource for individuals, agencies, and institutions wishing to put this powerful tool to work in*

their burgeoning information treasuries. The Second Edition reflects developments in the field as well as in the Greenstone Digital Library open source software. In Part I, the authors have added an entire new chapter on user groups, user support, collaborative browsing, user contributions, and so on. There is also new material on content-based queries, map-based queries, cross-media queries. There is an increased emphasis placed on multimedia by adding a "digitizing" section to each major media type. A new chapter has also been added on "internationalization," which will address Unicode standards, multi-language interfaces and collections, and issues with non-European languages (Chinese, Hindi, etc.). Part II, the software tools section, has been completely rewritten to reflect the new developments in Greenstone Digital Library Software, an internationally popular open source software tool with a comprehensive graphical facility for creating and maintaining digital libraries. Outlines the history of libraries on both traditional and digital Written for both technical and non-technical audiences and covers the entire spectrum of media, including text, images, audio, video, and related XML standards Web-enhanced with software documentation, color illustrations, full-text index, source code, and more

COLLEGE PHYSICS

Breton Publishing Company

LECTURES ON COMPUTATION

Perseus Books *Covering the theory of computation, information and communications, the physical aspects of computation, and the physical limits of computers, this text is based on the notes taken by one of its editors, Tony Hey, on a lecture course on computation given b*

ON THE PROPERTIES OF NOVEL SUPERCONDUCTORS

BoD - Books on Demand *Since the discovery of superconductivity, a great number of theoretical and experimental efforts have been made to describe this new phase of matter that emerged in many body systems. In this regard, theoretical models have been presented; the most famous of which was the BCS theory that can only describe conventional superconductors. With the discovery of new class superconductors, the superconducting mechanism became a new challenge in the field of condensed matter physics. This unexpected discovery opened a new area in the history of superconductivity, and experimental researchers started trying to find new compounds in this class of superconductors. These superconductors are often characterized by the anisotropic character in the superconducting gap function with nodes along a certain direction in the momentum space. Since the pairing interaction has an important role in the superconducting gap structure, its determination is very important to explain the basic pairing mechanism. In this regard, this book includes valuable theoretical and experimental discussions about the properties of superconductors. Here you will find valuable research describing the properties of unconventional superconductors. Wolters Kluwer India Pvt Ltd*

STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES

A PATH FORWARD

National Academies Press Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. *Strengthening Forensic Science in the United States: A Path Forward* provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. *Strengthening Forensic Science in the United States* gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

SCHAUM'S OUTLINE OF COLLEGE PHYSICS, 11TH EDITION

McGraw Hill Professional The ideal review for your college physics course More than 40 million students have trusted Schaum's Outlines for their expert knowledge and helpful solved problems. Written by renowned experts in their respective fields, Schaum's Outlines cover everything from math to science, nursing to language. The main feature for all these books is the solved problems. Step-by-step, authors walk readers through coming up with solutions to exercises in their topic of choice. Outline format facilitates quick and easy review of college physics 984 solved problems Hundreds more practice problems with answers Exercises to help you test your mastery of college physics Appropriate for the following courses: College Physics, Introduction to Physics, Physics I and II, Noncalculus Physics, Advanced Placement H.S. Physics

FOCUS ON COLLEGE SUCCESS

Cengage Learning With increased attention paid to resilience, teamwork, and professionalism, the fourth edition of *FOCUS ON COLLEGE SUCCESS* recognizes the varied experiences of today's students and guides them to be more motivated and focused. The research-based approach builds a solid foundation, allowing students see the relevancy of this course to their lives. By helping students develop realistic expectations of what it takes to learn, *FOCUS ON COLLEGE SUCCESS* motivates and encourages students with direct applications and immediate results. Written by Constance Staley, one of the best-known names in the field of motivation, this text

increases the credibility of the college success course by providing tools that help students succeed and thereby improve institutional retention rates. Starting with the use of the FOCUS Challenge Cases that introduce each chapter, FOCUS ON COLLEGE SUCCESS strikes a personal and informal conversation with readers--directly connecting with them and drawing them into text discussions. In a recent survey of students using FOCUS, 97% would recommend that their professor use this book again with next year's first-year students. Many students today are over-optionalized and over-obligated. FOCUS ON COLLEGE SUCCESS addresses those issues head-on, creating teachable moments—and concrete results—in every class period. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

POPULAR SCIENCE

Popular Science gives our readers the information and tools to improve their technology and their world. The core belief that Popular Science and our readers share: The future is going to be better, and science and technology are the driving forces that will help make it better.

MEDICAL IMAGING PHYSICS

John Wiley & Sons This comprehensive publication covers all aspects of image formation in modern medical imaging modalities, from radiography, fluoroscopy, and computed tomography, to magnetic resonance imaging and ultrasound. It addresses the techniques and instrumentation used in the rapidly changing field of medical imaging. Now in its fourth edition, this text provides the reader with the tools necessary to be comfortable with the physical principles, equipment, and procedures used in diagnostic imaging, as well as appreciate the capabilities and limitations of the technologies.

MODERN PHYSICS

Worth Pub For the intermediate-level course, the Fifth Edition of this widely used text takes modern physics textbooks to a higher level. With a flexible approach to accommodate the various ways of teaching the course (both one- and two-term tracks are easily covered), the authors recognize the audience and its need for updated coverage, mathematical rigor, and features to build and support student understanding. Continued are the superb explanatory style, the up-to-date topical coverage, and the Web enhancements that gained earlier editions worldwide recognition. Enhancements include a streamlined approach to nuclear physics, thoroughly revised and updated coverage on particle physics and astrophysics, and a review of the essential Classical Concepts important to students studying Modern Physics.

PISA TAKE THE TEST SAMPLE QUESTIONS FROM OECD'S PISA ASSESSMENTS

SAMPLE QUESTIONS FROM OECD'S PISA ASSESSMENTS

OECD Publishing *This book presents all the publicly available questions from the PISA surveys. Some of these questions were used in the PISA 2000, 2003 and 2006 surveys and others were used in developing and trying out the assessment.*

POWDER DIFFRACTION FILE

EDUCATION INDEXES. INORGANIC AND ORGANIC PHASES

MATHEMATICAL METHODS FOR PHYSICS AND ENGINEERING

A COMPREHENSIVE GUIDE

Cambridge University Press *The third edition of this highly acclaimed undergraduate textbook is suitable for teaching all the mathematics for an undergraduate course in any of the physical sciences. As well as lucid descriptions of all the topics and many worked examples, it contains over 800 exercises. New stand-alone chapters give a systematic account of the 'special functions' of physical science, cover an extended range of practical applications of complex variables, and give an introduction to quantum operators. Further tabulations, of relevance in statistics and numerical integration, have been added. In this edition, half of the exercises are provided with hints and answers and, in a separate manual available to both students and their teachers, complete worked solutions. The remaining exercises have no hints, answers or worked solutions and can be used for unaided homework; full solutions are available to instructors on a password-protected web site, www.cambridge.org/9780521679718.*

STUDENT SOLUTIONS MANUAL TO ACCOMPANY PHYSICS 5TH EDITION

Wiley

EXPLORING METHODS IN INFORMATION LITERACY RESEARCH

Elsevier *This book provides an overview of approaches to assist researchers and practitioners to explore ways of undertaking research in the information literacy field. The first chapter provides an introductory overview of research by Dr Kirsty Williamson (author of *Research Methods for Students, Academics and Professionals: Information Management and Systems*) and this sets the scene for the rest of the chapters where each author explores the key aspects of a specific method and explains how it may be applied in practice. The methods covered include those representing qualitative, quantitative and mixed methods. Both a chapter on the topical evidence-based practice approach, and another critiquing it, are also included. The final chapter points the way towards potential new directions for the burgeoning field. Renowned information literacy researcher Dr Christine Bruce affirms the usefulness of the book: 'New researchers and early career professionals will appreciate the clarity of the introductions provided' to each of the methods covered.*

UNIVERSITY PHYSICS

University Physics is designed for the two- or three-semester calculus-based physics course. The text has been developed to meet the scope and sequence of most university physics courses and provides a foundation for a career in mathematics, science, or engineering. The book provides an important opportunity for students to learn the core concepts of physics and understand how those concepts apply to their lives and to the world around them. Due to the comprehensive nature of the material, we are offering the book in three volumes for flexibility and efficiency. Coverage and Scope Our University Physics textbook adheres to the scope and sequence of most two- and three-semester physics courses nationwide. We have worked to make physics interesting and accessible to students while maintaining the mathematical rigor inherent in the subject. With this objective in mind, the content of this textbook has been developed and arranged to provide a logical progression from fundamental to more advanced concepts, building upon what students have already learned and emphasizing connections between topics and between theory and applications. The goal of each section is to enable students not just to recognize concepts, but to work with them in ways that will be useful in later courses and future careers. The organization and pedagogical features were developed and vetted with feedback from science educators dedicated to the project.

VOLUME III
 Unit 1: Optics Chapter 1: The Nature of Light Chapter 2: Geometric Optics and Image Formation Chapter 3: Interference Chapter 4: Diffraction Unit 2: Modern Physics Chapter 5: Relativity Chapter 6: Photons and Matter Waves Chapter 7: Quantum Mechanics Chapter 8: Atomic Structure Chapter 9: Condensed Matter Physics Chapter 10: Nuclear Physics Chapter 11: Particle Physics and Cosmology

PARTIAL DIFFERENTIAL EQUATIONS

AN INTRODUCTION

John Wiley & Sons Partial Differential Equations presents a balanced and comprehensive introduction to the concepts and techniques required to solve problems containing unknown functions of multiple variables. While focusing on the three most classical partial differential equations (PDEs)—the wave, heat, and Laplace equations—this detailed text also presents a broad practical perspective that merges mathematical concepts with real-world application in diverse areas including molecular structure, photon and electron interactions, radiation of electromagnetic waves, vibrations of a solid, and many more. Rigorous pedagogical tools aid in student comprehension; advanced topics are introduced frequently, with minimal technical jargon, and a wealth of exercises reinforce vital skills and invite additional self-study. Topics are presented in a logical progression, with major concepts such as wave propagation, heat and diffusion, electrostatics, and quantum mechanics placed in contexts familiar to students of various fields in science and engineering. By understanding the properties and applications of PDEs, students will be equipped to better analyze and interpret central processes of the natural world.

WORLD MIGRATION REPORT 2020

United Nations Since 2000, IOM has been producing world migration reports. The *World Migration Report 2020*, the tenth in the world migration report series, has been produced to contribute to increased understanding of migration throughout the world. This new edition presents key data and information on migration as well as thematic chapters on highly topical migration issues, and is structured to focus on two key contributions for readers: Part I: key information on migration and migrants (including migration-related statistics); and Part II: balanced, evidence-based analysis of complex and emerging migration issues.

TOWARDS SAFER RADIOTHERAPY

PRINCIPLES OF ENVIRONMENTAL PHYSICS

Butterworth-Heinemann Thoroughly revised and up-dated edition of a highly successful textbook.

QUANTUM COMPUTATION AND QUANTUM INFORMATION

Cambridge University Press First-ever comprehensive introduction to the major new subject of quantum computing and quantum information.

THE FOURTH INDUSTRIAL REVOLUTION

Penguin UK The founder and executive chairman of the World Economic Forum on how the impending technological revolution will change our lives We are on the brink of the Fourth Industrial Revolution. And this one will be unlike any other in human history. Characterized by new technologies fusing the physical, digital and biological worlds, the Fourth Industrial Revolution will impact all disciplines, economies and industries - and it will do so at an unprecedented rate. World Economic Forum data predicts that by 2025 we will see: commercial use of nanomaterials 200 times stronger than steel and a million times thinner than human hair; the first transplant of a 3D-printed liver; 10% of all cars on US roads being driverless; and much more besides. In *The Fourth Industrial Revolution*, Schwab outlines the key technologies driving this revolution, discusses the major impacts on governments, businesses, civil society and individuals, and offers bold ideas for what can be done to shape a better future for all.

UNIVERSITY PHYSICS

University Physics is designed for the two- or three-semester calculus-based physics course. The text has been developed to meet the scope and sequence of most university physics courses and provides a foundation for a career in mathematics, science, or engineering. The book provides an important opportunity for students to learn the core concepts of physics and understand how those concepts apply to their lives and to the world around them. Due to the comprehensive nature of the material, we are offering the book in three volumes for flexibility and efficiency. Coverage and Scope Our *University Physics* textbook adheres to the scope and

sequence of most two- and three-semester physics courses nationwide. We have worked to make physics interesting and accessible to students while maintaining the mathematical rigor inherent in the subject. With this objective in mind, the content of this textbook has been developed and arranged to provide a logical progression from fundamental to more advanced concepts, building upon what students have already learned and emphasizing connections between topics and between theory and applications. The goal of each section is to enable students not just to recognize concepts, but to work with them in ways that will be useful in later courses and future careers. The organization and pedagogical features were developed and vetted with feedback from science educators dedicated to the project.

VOLUME I Unit 1: Mechanics
 Chapter 1: Units and Measurement Chapter 2: Vectors Chapter 3: Motion Along a Straight Line Chapter 4: Motion in Two and Three Dimensions Chapter 5: Newton's Laws of Motion Chapter 6: Applications of Newton's Laws Chapter 7: Work and Kinetic Energy Chapter 8: Potential Energy and Conservation of Energy Chapter 9: Linear Momentum and Collisions Chapter 10: Fixed-Axis Rotation Chapter 11: Angular Momentum Chapter 12: Static Equilibrium and Elasticity Chapter 13: Gravitation Chapter 14: Fluid Mechanics Unit 2: Waves and Acoustics Chapter 15: Oscillations Chapter 16: Waves Chapter 17: Sound

GLOBAL TRENDS 2030

ALTERNATIVE WORLDS

Createspace Independent Publishing Platform This publication covers global megatrends for the next 20 years and how they will affect the United States. This is the fifth installment in the National Intelligence Council's series aimed at providing a framework for thinking about possible futures and their implications. The report is intended to stimulate strategic thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories during the next 15-20 years by identifying critical trends and potential discontinuities. The authors distinguish between megatrends, those factors that will likely occur under any scenario, and game-changers, critical variables whose trajectories are far less certain. NIC 2012-001. Several innovations are included in Global Trends 2030, including: a review of the four previous Global Trends reports, input from academic and other experts around the world, coverage of disruptive technologies, and a chapter on the potential trajectories for the US role in the international system and the possible the impact on future international relations. Table of Contents: Introduction 1 Megatrends 6 Individual Empowerment 8 Poverty Reduction 8 An Expanding Global Middle Class 8 Education and the Gender Gap 10 Role of Communications Technologies 11 Improving Health 11 A MORE CONFLICTED IDEOLOGICAL LANDSCAPE 12 Diffusion of Power 15 THE RISE AND FALL OF COUNTRIES: NOT THE SAME OLD STORY 17 THE LIMITS OF HARD POWER IN THE WORLD OF 2030 18 Demographic Patterns 20 Widespread Aging 20 Shrinking Number of Youthful Countries 22 A New Age of Migration 23 The World as Urban 26 Growing Food, Water, and Energy Nexus 30 Food, Water, and Climate 30 A Brighter Energy Outlook 34 Game-Changers 38 The Crisis-Prone Global Economy 40 The Plight of the West 40 Crunch Time Too for the Emerging Powers 43 A Multipolar

Global Economy: Inherently More Fragile? 46 The Governance Gap 48 Governance Starts at Home: Risks and Opportunities 48 INCREASED FOCUS ON EQUALITY AND OPENNESS 53 NEW GOVERNMENTAL FORMS 54 A New Regional Order? 55 Global Multilateral Cooperation 55 The Potential for Increased Conflict 59 INTRASTATE CONFLICT: CONTINUED DECLINE 59 Interstate Conflict: Chances Rising 61 Wider Scope of Regional Instability 70 The Middle East: At a Tipping Point 70 South Asia: Shocks on the Horizon 75 East Asia: Multiple Strategic Futures 76 Europe: Transforming Itself 78 Sub-Saharan Africa: Turning a Corner by 2030? 79 Latin America: More Prosperous but Inherently Fragile 81 The Impact of New Technologies 83 Information Technologies 83 AUTOMATION AND MANUFACTURING TECHNOLOGIES 87 Resource Technologies 90 Health Technologies 95 The Role of the United States 98 Steady US Role 98 Multiple Potential Scenarios for the United States' Global Role 101 Alternative Worlds 107 Stalled Engines 110 FUSION 116 Gini-out-of-the-Bottle 122 Nonstate World 128 Acknowledgements 134 GT2030 Blog References 137 Audience: Appropriate for anyone, from businesses to banks, government agencies to start-ups, the technology sector to the teaching sector, and more. This publication helps anticipate where the world will be: socially, politically, technologically, and culturally over the next few decades. Keywords: Global Trends 2030 Alternative Worlds, global trends 2030, Global Trends series, National Intelligence Council, global trajectories, global megatrends, geopolitics, geopolitical changes

EUROCK 2006: MULTIPHYSICS COUPLING AND LONG TERM BEHAVIOUR IN ROCK MECHANICS

PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM OF THE INTERNATIONAL SOCIETY FOR ROCK MECHANICS, EUROCK 2006, LIÈGE, BELGIUM, 9-12 MAY 2006

CRC Press Special emphasis is given to the constitutive behaviour of rock material, including rock mechanics and partial saturation, chemo-mechanics, thermo-hydro-mechanics, weathering and creep. Theoretical concepts, laboratory and field experiments and numerical simulations are discussed. Multiphysics coupling and long-term behaviour has practical applications in a number of areas. In oil engineering (enhanced oil recovery, CO₂ injection, and well stability); in underground waste storage, post-mine behaviour and the long-term behaviour of railway and road infrastructures. This book will be useful to professionals and academics working in a variety of fields related to rock mechanics and environmental geotechnics. .

INTRODUCTION TO QUANTUM MECHANICS

Cambridge University Press Changes and additions to the new edition of this classic textbook include a new chapter on symmetries, new problems and examples, improved explanations, more numerical problems to be worked on a computer, new applications to solid state physics, and consolidated treatment of time-dependent potentials.

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

UNIVERSITY PHYSICS

"University Physics is a three-volume collection that meets the scope and sequence requirements for two- and three-semester calculus-based physics courses. Volume 1 covers mechanics, sound, oscillations, and waves. This textbook emphasizes connections between theory and application, making physics concepts interesting and accessible to students while maintaining the mathematical rigor inherent in the subject. Frequent, strong examples focus on how to approach a problem, how to work with the equations, and how to check and generalize the result."--Open Textbook Library.

COVID-19: THE GREAT RESET

ISBN Agentur Schweiz "The Corona crisis and the Need for a Great Reset" is a guide for anyone who wants to understand how COVID-19 disrupted our social and economic systems, and what changes will be needed to create a more inclusive, resilient and sustainable world going forward. Thierry Malleret, founder of the Monthly Barometer, and Klaus Schwab, founder and executive Chairman of the World Economic Forum, explore what the root causes of these crisis were, and why they lead to a need for a Great Reset. Theirs is a worrying, yet hopeful analysis. COVID-19 has created a great disruptive reset of our global social, economic, and political systems. But the power of human beings lies in being foresighted and having the ingenuity, at least to a certain extent, to take their destiny into their hands and to plan for a better future. This is the purpose of this book: to shake up and to show the deficiencies which were manifest in our global system, even before

COVID broke out.

HANDBOOK ON QUALITY AND STANDARDISATION IN E-LEARNING

Springer Science & Business Media For building a knowledge society, it is critically important to thoroughly understand quality and standards in e-learning. The handbook provides a cross-national perspective on these issues and draws a clear picture of the situation in quality development and standardization. It gives a concise overview on the field of quality research which can be used for teaching purposes and contains examples of quality and standards and practice.

EXCEL 2013: THE MISSING MANUAL

"O'Reilly Media, Inc." The world's most popular spreadsheet program is now more powerful than ever, but it's also more complex. That's where this Missing Manual comes in. With crystal-clear explanations and hands-on examples, Excel 2013: The Missing Manual shows you how to master Excel so you can easily track, analyze, and chart your data. You'll be using new features like PowerPivot and Flash Fill in no time. The important stuff you need to know: Go from novice to ace. Learn how to analyze your data, from writing your first formula to charting your results. Illustrate trends. Discover the clearest way to present your data using Excel's new Quick Analysis feature. Broaden your analysis. Use pivot tables, slicers, and timelines to examine your data from different perspectives. Import data. Pull data from a variety of sources, including website data feeds and corporate databases. Work from the Web. Launch and manage your workbooks on the road, using the new Excel Web App. Share your worksheets. Store Excel files on SkyDrive and collaborate with colleagues on Facebook, Twitter, and LinkedIn. Master the new data model. Use PowerPivot to work with millions of rows of data. Make calculations. Review financial data, use math and scientific formulas, and perform statistical analyses.

REINFORCEMENT LEARNING, SECOND EDITION

AN INTRODUCTION

MIT Press The significantly expanded and updated new edition of a widely used text on reinforcement learning, one of the most active research areas in artificial intelligence. Reinforcement learning, one of the most active research areas in artificial intelligence, is a computational approach to learning whereby an agent tries to maximize the total amount of reward it receives while interacting with a complex, uncertain environment. In Reinforcement Learning, Richard Sutton and Andrew Barto provide a clear and simple account of the field's key ideas and algorithms. This second edition has been significantly expanded and updated, presenting new topics and updating coverage of other topics. Like the first edition, this second edition focuses on core online learning algorithms, with the more mathematical material set off in shaded boxes. Part I covers as much of reinforcement learning as possible without going beyond the tabular case for which exact solutions can be found. Many algorithms presented in this part are new to the second edition, including UCB, Expected Sarsa, and Double Learning. Part II extends these ideas to function

approximation, with new sections on such topics as artificial neural networks and the Fourier basis, and offers expanded treatment of off-policy learning and policy-gradient methods. Part III has new chapters on reinforcement learning's relationships to psychology and neuroscience, as well as an updated case-studies chapter including AlphaGo and AlphaGo Zero, Atari game playing, and IBM Watson's wagering strategy. The final chapter discusses the future societal impacts of reinforcement learning.

GLOBAL TRENDS 2030

ALTERNATIVE WORLDS : A PUBLICATION OF THE NATIONAL INTELLIGENCE COUNCIL

U.S. Government Printing Office *This report is intended to stimulate thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories over the next 15 years. As with the NIC's previous Global Trends reports, we do not seek to predict the future, which would be an impossible feat, but instead provide a framework for thinking about possible futures and their implications. In-depth research, detailed modeling and a variety of analytical tools drawn from public, private and academic sources were employed in the production of Global Trends 2030. NIC leadership engaged with experts in nearly 20 countries, from think tanks, banks, government offices and business groups, to solicit reviews of the report.*

THE GOAL

A PROCESS OF ONGOING IMPROVEMENT

Routledge *Alex Rogo is a harried plant manager working ever more desperately to try and improve performance. His factory is rapidly heading for disaster. So is his marriage. He has ninety days to save his plant - or it will be closed by corporate HQ, with hundreds of job losses. It takes a chance meeting with a colleague from student days - Jonah - to help him break out of conventional ways of thinking to see what needs to be done. Described by Fortune as a 'guru to industry' and by Businessweek as a 'genius', Eliyahu M. Goldratt was an internationally recognized leader in the development of new business management concepts and systems. This 20th anniversary edition includes a series of detailed case study interviews by David Whitford, Editor at Large, Fortune Small Business, which explore how organizations around the world have been transformed by Eli Goldratt's ideas. The story of Alex's fight to save his plant contains a serious message for all managers in industry and explains the ideas which underline the Theory of Constraints (TOC) developed by Eli Goldratt. Written in a fast-paced thriller style, The Goal is the gripping novel which is transforming management thinking throughout the Western world. It is a book to recommend to your friends in industry - even to your bosses - but not to your competitors!*

NANOSENSORS

PHYSICAL, CHEMICAL, AND BIOLOGICAL

CRC Press Nanosensors are innovative devices that exploit the unique properties exhibited by matter at the nanoscale. A growing and exciting field, nanosensors have recently spurred considerable research endeavors across the globe, driving a need for the development of new device concepts and engineering nanostructured materials with controlled properties. Nanosensors: Physical, Chemical, and Biological, Second Edition offers a panoramic view of the field and related nanotechnologies with extraordinary clarity and depth. Presenting an interdisciplinary approach, blending physics, chemistry and biology, this new edition is broad in scope and organised into six parts; beginning with the fundamentals before moving onto nanomaterials and nanofabrication technologies in the second part. The third and fourth parts provide a critical appraisal of physical nanosensors, and explore the chemical and biological categories of nanosensors. The fifth part sheds light on the emerging applications of nanosensors in the sectors of society, industry, and defense and details the cutting-edge applications of state-of-the-art nanosensors in environmental science, food technology, medical diagnostics, and biotechnology. The final part addresses self-powering and networking issues of nanosensors, and provides glimpses of future trends. This is an ideal reference for researchers and industry professionals engaged in the frontier areas of material science and semiconductor fabrication as well as graduate students in physics and engineering pursuing electrical engineering and electronics courses with a focus on nanoscience and nanotechnology. Key features: Provides an updated, all-encompassing exploration of contemporary nanosensors and highlights the exclusive nanoscale properties on which nanosensors are designed. Presents an accessible approach with a question-and-answer format to allow an easy grasp of the intricacies involved in the complex working mechanisms of devices. Contains clear, illustrative diagrams enabling the visualization of nanosensor operations, along with worked examples, end of chapter questions, and exhaustive up-to-date bibliographies appended to each chapter.

PROMOTING THE EDUCATIONAL SUCCESS OF CHILDREN AND YOUTH LEARNING ENGLISH

PROMISING FUTURES

National Academies Press Educating dual language learners (DLLs) and English learners (ELs) effectively is a national challenge with consequences both for individuals and for American society. Despite their linguistic, cognitive, and social potential, many ELs "who account for more than 9 percent of enrollment in grades K-12 in U.S. schools" are struggling to meet the requirements for academic success, and their prospects for success in postsecondary education and in the workforce are jeopardized as a result. Promoting the Educational Success of Children and Youth Learning English: Promising Futures examines how evidence based on research relevant to the development of DLLs/ELs from birth to age 21 can inform

education and health policies and related practices that can result in better educational outcomes. This report makes recommendations for policy, practice, and research and data collection focused on addressing the challenges in caring for and educating DLLs/ELs from birth to grade 12.

DISTANCE EDUCATION FOR TEACHER TRAINING

Routledge First published in 2002. Routledge is an imprint of Taylor & Francis, an informa company.

A HISTORY OF IRELAND IN 100 OBJECTS

*Prism Objects don't just have stories, they tell stories. There is a certain paradox that surrounds them. They seem precise and fixed, literally tangible, yet they can put us in touch with the past in a direct and immediate way. What they said to their contemporaries may be different from what they say to us. Whether it's a silver tea urn from Georgian Dublin or an illuminated page from the Book of Kells, historical objects help us gain a more complex understanding of our past. When so much about the past - especially the Irish past - is contested, physical things can provide secure anchors in history. They ought to make things simpler, and yet, when an object is actually examined, this apparent simplicity quickly falls away. Such interesting objects tend to provoke more questions than they can answer. Over the past two years, Fintan O'Toole, the literary editor of the Irish Times, has selected 100 objects - the majority of which can be found in the National Museum of Ireland - to narrate a history of Ireland. These objects have been chosen simply for their ability to illuminate moments of change, development, or crisis. Articles on these historical objects appeared weekly in the Irish Times and are now being collected in book form by the Royal Irish Academy. The book will act as a reminder that people have inhabited Ireland for quite some time and have survived innumerable ordeals and challenges. *** "The objects....span the centuries from 5000 B.C. to 2005....a wooden fish trap from the Mesolithic era, found preserved in a bog in Co. Meath....St. Patrick's Confessio (460-90), the oldest surviving example of prose writing in Ireland....an emigrant's suitcase from the 1950s tells the story of Ireland's diasporic expansion. The final object was selected by readers from a shortlist of ten. A decommissioned AK47 assault rifle, it speaks to Ireland's recent history of strife and commitment to peace; its links with the larger world, and its own unique story." - Sheila Langan, Irish America Magazine, June-July 2013. *** "Thoughtfully written and thoroughly accessible to readers of all backgrounds, A History of Ireland in 100 Objects is both a fascinating browse and a repository of historical highlights made tangible, highly recommended." - The Midwest Book Review, Wisconsin Bookwatch, The World History Shelf, May 2013~*