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Unschooling Rules John Wiley & Sons

This book describes how surface tension effects can be used by engineers to provide mechanical functions in miniaturized products (1 mm). Even if precursors of this field such as Jurin or Laplace already date back to the 18th century, describing surface tension effects from a mechanical perspective is very recent. The originality of this book is to consider the effects of capillary bridges on solids, including forces and torques exerted both statically and dynamically by the liquid along the 6 degrees-of-freedom. It provides a comprehensive approach to various applications, such as capillary adhesion (axial force), centering force in packaging and micro-assembly (lateral force) and recent developments such as a capillary motor (torque).

Semiconductor-Based Sensors Springer

This book provides a comprehensive summary of the status of emerging sensor technologies and provides a framework for future advances in the field. Chemical sensors have gained in importance in the past decade for applications that include homeland security, medical and environmental monitoring and also food safety. A desirable goal is the ability to simultaneously analyze a wide variety of environmental and biological gases and liquids in the field and to be able to selectively detect a target analyte with high specificity and sensitivity. The goal is to realize real-time, portable and inexpensive chemical and biological sensors and to use these as monitors for handheld gas, environmental pollutant, exhaled breath, saliva, urine, or blood, with wireless capability. In the medical area, frequent screening can catch the early development of diseases, reduce the suffering of patients due to late diagnoses, and lower the medical cost. For example, a 96% survival rate has been predicted in breast cancer patients if the frequency of screening is every three months. This frequency cannot be achieved with current methods of mammography due to high cost to the patient and invasiveness

(radiation). In the area of detection of medical biomarkers, many different methods, including enzyme-linked immunosorbent assay (ELISA), particle-based flow cytometric assays, electrochemical measurements based on impedance and capacitance, electrical measurement of microcantilever resonant frequency change, and conductance measurement of semiconductor nanostructures, gas chromatography (GC), ion chromatography, high density peptide arrays, laser scanning quantitative analysis, chemiluminescence, selected ion flow tube (SIFT), nanomechanical cantilevers, bead-based suspension microarrays, magnetic biosensors and mass spectrometry (MS) have been employed. Depending on the sample condition, these methods may show variable results in terms of sensitivity for some applications and may not meet the requirements for a handheld biosensor.

Customer Centricity Focus on the Right Customers for Strategic Advantage

Strategic Management delivers an insightful and concise introduction to strategic management concepts utilizing a strong mix of real-world contemporary examples. Written in a conversational style, this product sparks ideas, fuels creative thinking and discussion, while engaging students with the concepts they are studying.

Properties, Design Optimization, and Applications CRC Press

The objective of the symposium is to provide a forum for researchers and practitioners from industry, academia, and government involved in the area of Medical Ultrasonics Sensors, NDE

and Industrial Applications Physical Acoustics Microacoustics Transducers and Transducer Materials or similar techniques and protocols
Current Awareness in Particle Technology CRC Press
Mark Cuban shares his wealth of experience and business savvy in his first published book, HOW TO WIN AT THE SPORT OF BUSINESS. "It's New Year's resolution time, and Mark Cuban's new book offers the rationale for a good one." —BUSINESS INSIDER Using the greatest material from his popular Blog Maverick, Cuban has collected and updated his postings on business and life to provide a catalog of insider knowledge on what it takes to become a thriving entrepreneur. He tells his own rags-to-riches story of how he went from selling powdered milk and sleeping on friends' couches to owning his own company and becoming a multi-billion dollar success story. His unconventional yet highly effective ideas on how to build a successful business offer entrepreneurs at any stage of their careers a huge edge over their competitors. "In short, [HOW TO WIN AT THE SPORT OF BUSINESS] exceeded...expectations. Short chapters...got right to the point and were not filled with 'stuffing'." —HUFFINGTON POST

History, Philosophy and Current Status World Scientific Publishing Company

The first comprehensive reference on mechatronics, The Mechatronics Handbook was quickly embraced as the gold standard in the field. From washing machines, to coffeemakers, to cell phones, to the ubiquitous PC in almost

every household, what, these days, doesn't take advantage of mechatronics in its design and function? In the scant five years since the initial publication of the handbook, the latest generation of smart products has made this even more obvious. Too much material to cover in a single volume Originally a single-volume reference, the handbook has grown along with the field. The need for easy access to new material on rapid changes in technology, especially in computers and software, has made the single volume format unwieldy. The second edition is offered as two easily digestible books, making the material not only more accessible, but also more focused. Completely revised and updated, Robert Bishop's seminal work is still the most exhaustive, state-of-the-art treatment of the field available. Engineering Economy McGraw Hill Professional

"The Human Hand as an Inspiration for Robot Hand Development" presents an edited collection of authoritative contributions in the area of robot hands. The results described in the volume are expected to lead to more robust, dependable, and inexpensive distributed systems such as those endowed with complex and advanced sensing, actuation, computation, and communication capabilities. The twenty-four chapters discuss the field of robotic grasping and manipulation viewed in light of the human hand's capabilities and push the state-of-the-art in robot hand design and control. Topics discussed include human hand biomechanics, neural control, sensory feedback and perception, and robotic grasp and

manipulation. This book will be useful for researchers from diverse areas such as robotics, biomechanics, neuroscience, and anthropologists.

If I Can Do It, You Can Do It CRC Press

For a sophomore-level course in Linear Algebra. Based on the recommendations of the Linear Algebra Curriculum Study Group, this introduction to linear algebra offers a matrix-oriented approach with more emphasis on problem solving and applications. Throughout the text, use of technology is encouraged. The focus is on matrix arithmetic, systems of linear equations, properties of Euclidean n -space, eigenvalues and eigenvectors, and orthogonality. Although matrix-oriented, the text provides a solid coverage of vector spaces.

Space, Place, and the Infobahn Greenleaf Book Group

Research into and development of high-precision systems, microelectromechanical systems, distributed sensors/actuators, smart structural systems, high-precision controls, etc. have drawn much attention in recent years. These new devices and systems will bring about a new technical revolution in modern industries and impact future human life. This book presents a unique overview of these technologies such as silicon based sensors/actuators and control piezoelectric micro sensors/actuators, micro actuation and control, micro sensor applications in robot control, optical fiber sensors/systems, etc. These are four essential subjects emphasized in the book: 1. Survey of the (current) research and development; 2. Fundamental theories and tools; 3. Practical applications. 4. Outlining future research and development.

BioMEMS and Biomedical Nanotechnology CRC Press

This book is designed to offer a comprehensive high-level introduction to transhumanism, an international political and cultural movement that aims to produce a “paradigm shift” in our ethical and political understanding of human evolution. Transhumanist thinkers want the human species to take the course of evolution into its own hands, using advanced technologies currently under development – such as robotics, artificial intelligence, biotechnology, cognitive neurosciences, and nanotechnology – to overcome our present physical and mental limitations, improve our intelligence beyond the current maximum achievable level, acquire skills that are currently the preserve of other species, abolish involuntary aging and death, and ultimately achieve a post-human level of existence. The book covers transhumanism from a historical, philosophical, and scientific viewpoint, tracing its cultural roots, discussing the main philosophical, epistemological, and ethical issues, and reviewing the state of the art in scientific research on the topics of most interest to transhumanists. The writing style is clear and accessible for the general reader, but the book will also appeal to graduate and undergraduate students.

Mission-Oriented Sensor Networks and Systems: Art and Science Springer Science & Business Media

An application of differential forms for the study of some local and global aspects of the differential geometry of surfaces. Differential forms are introduced in a simple way that will make them attractive to "users" of mathematics. A brief and elementary introduction to differentiable manifolds is given so that the main theorem, namely Stokes' theorem, can be presented in its natural setting. The applications consist in developing the method of moving frames expounded by E. Cartan to study the local differential geometry of immersed surfaces in R^3 as well as the intrinsic geometry of surfaces. This is then collated in the last chapter to present Chern's proof of the

Gauss-Bonnet theorem for compact surfaces.

Flow Manufacturing -- What Went Right, What Went Wrong Wharton Digital Press

Electron microscopy has revolutionized our understanding of the extraordinary intellectual demands required of the materials scientist in order to do the job properly: crystallography, diffraction, image contrast, inelastic scattering events, and to tailor the microstructure (and meso structure) of materials spectroscopy. Remember, these used to be fields in themselves to achieve specific sets of properties; the extraordinary abilities. Today, one has to understand the fundamentals of modern transmission electron microscopy-TEM of all of these areas before one can hope to tackle significant instruments to provide almost all of the structural, phase, and cant problems in materials science. TEM is a technique of and crystallographic data allow us to accomplish this feat. characterizing materials down to the atomic limits. It must Therefore, it is obvious that any curriculum in modern materials must be used with care and attention, in many cases involving materials education must include suitable courses in electron microscopy teams of experts from different venues. The fundamentals of spectroscopy. It is also essential that suitable texts be available are, of course, based in physics, so aspiring materials scientists for the preparation of the students and researchers who must be well advised to have prior exposure to, for

carry out electron microscopy properly and quantitatively.

Fundamentals of Electrochemical Deposition Springer Science & Business Media

WINNER 2009 CHOICE AWARD OUTSTANDING ACADEMIC

TITLE! Nanotechnology is no longer a subdiscipline of chemistry, engineering, or any other field. It represents the convergence of many fields, and therefore demands a new paradigm for teaching. This textbook is for the next generation of nanotechnologists. It surveys the field's broad landscape, exploring the physical basics such as nanorheology, nanofluidics, and nanomechanics as well as industrial concerns such as manufacturing, reliability, and safety. The authors then explore the vast range of nanomaterials and systematically outline devices and applications in various industrial sectors. This color text is an ideal companion to Introduction to Nanoscience by the same group of esteemed authors. Both titles are also available as the single volume Introduction to Nanoscience and Nanotechnology. Qualifying instructors who purchase either of these volumes (or the combined set) are given online access to a wealth of instructional materials. These include detailed lecture notes, review summaries, slides, exercises, and more. The authors provide enough material for both one- and two-semester courses.

Mechatronics Diversion Books

energy production, environmental management, transportation, communication, computation, and education. As the twenty-first century unfolds, nanotechnology's impact on the health, wealth, and security of the world's people is expected to be at least as significant as the combined influences in this century of antibiotics, the integrated circuit, and human-made polymers. Dr. Neal Lane, Advisor to the President for Science and Technology and former National Science Foundation (NSF) director, stated at a Congressional hearing in April 1998, "If I were asked for an

area of science and engineering that will most likely produce the breakthroughs of tomorrow, I would point to nanoscale science and engineering." Recognizing this potential, the White House Office of Science and Technology Policy (OSTP) and the Office of Management and Budget (OMB) have issued a joint memorandum to Federal agency heads that identifies nanotechnology as a research priority area for Federal investment in fiscal year 2001. This report charts "Nanotechnology Research Directions," as developed by the Interagency Working Group on Nano Science, Engineering, and Technology (IWGN) of the National Science and Technology Council (NSTC). The report incorporates the views of leading experts from government, academia, and the private sector. It reflects the consensus reached at an IWGN-sponsored workshop held on January 27-29, 1999, and detailed in contributions submitted thereafter by members of the U. S. science and engineering community. (See Appendix A for a list of contributors.)

Transmission Electron Microscopy John Wiley & Sons
Mechatronics has evolved into a way of life in engineering practice, and it pervades virtually every aspect of the modern world. In chapters drawn from the bestselling and now standard engineering reference, The Mechatronics Handbook, this book introduces the vibrant field of mechatronics and its key elements: physical system modeling; sensors and actuators; signals and systems; computers and logic systems; and software and data acquisition. These chapters, written by leading academics and practitioners, were carefully selected and organized to

provide an accessible, general outline of the subject ideal for the world of customer centrality, there are good non-specialists. Mechatronics: An Introduction first defines and organizes the key elements of mechatronics, exploring design approach, system interfacing, instrumentation, control systems, and microprocessor-based controllers and microelectronics. It then surveys physical system modeling, introducing MEMS along with modeling and simulation. Coverage then moves to essential elements of sensors and actuators, including characteristics and fundamentals of time and frequency, followed by control systems and subsystems, computer hardware, logic, system interfaces, communication and computer networking, data acquisition, and computer-based instrumentation systems. Clear explanations and nearly 200 illustrations help bring the subject to life. Providing a broad overview of the fundamental aspects of the field, Mechatronics: An Introduction is an ideal primer for those new to the field, a handy review for those already familiar with the technology, and a friendly introduction for anyone who is curious about mechatronics.

Focus on the Right Customers for Strategic Advantage
CRC Press

A powerful call to action, Customer Centrality upends some of our most fundamental beliefs about customer service, customer relationship management, and customer lifetime value NOT ALL CUSTOMERS ARE CREATED EQUAL Despite what the tired old adage says, the customer is not always right. Not all customers deserve your best efforts: In

customers...and then there is pretty much everybody else. In Customer Centrality, Wharton professor Peter Fader, coauthor of the follow-up book The Customer Centrality Playbook, helps businesses radically rethink how they relate to customers. He provides insights to help you understand: Why customer centrality is the new model for success and product centrality must be ushered out How the ideas of brand equity and customer equity help us understand what kinds of companies naturally lend themselves to the customer-centric model and which ones don't Why the traditional models for determining the value of individual customers are flawed How executives can use customer lifetime value (CLV) and other customer-centric data to make smarter decisions about their companies How the well-intended idea of customer relationship management (CRM) lost its way-and how your company can properly put CRM to use Customer Centrality will help you realign your performance metrics, product development, customer relationship management and organization in order to make sure you focus directly on the needs of your most valuable customers and increase profits for the long term. ALSO AVAILABLE: Once Fader convinces you of the value of customer centrality in this book, The Customer Centrality Playbook, with Sarah Toms, will show you where to get started. "Reveals how to increase profits from your best customers, find more like them, and avoid over-investing in the rest....Decidedly accessible and absolutely necessary."

-Jim Sterne, Founding President and Chairman, Digital Analytics Association "Perfect read...It's short (60-90 minutes), clear, and the best summary I've read of why companies should rethink their approach to customers."

-Andrew McFarland, SVP, Chief Customer Officer, Black Box "Knowing what your customers are worth is the secret to focusing your time and money where it makes the most difference. You can't be all things to all people, so you need to learn to find out who really matters to your success. Fader makes it clear with great ideas and a readable style." -Andy Sernovitz, author, Word of Mouth Marketing THE WHARTON EXECUTIVE ESSENTIALS SERIES The Wharton Executive Essentials series from Wharton Digital Press brings the ideas of the Wharton School's thought leaders to you wherever you are. Inspired by Wharton's Executive Education program, each book is authored by globally renowned faculty and filled with real-life business examples and actionable advice. Wharton Executive Essentials guides offer a quick-reading, penetrating, and comprehensive summary of the knowledge leaders need to excel in today's competitive business environment and capture tomorrow's opportunities.

A Textbook for Materials Science Springer Science & Business Media

Jane has a problem. She can see angels, and not just any angels, but archangels. There's Michael, tough, gorgeous, and smarter than Sherlock Holmes. Lucifer, the bad boy you love to, well, love. And Gabriel? Well, he's like the best friend she always wanted, only with washboard abs. Together they make an awesome team when they

aren't trying to figure out a way to screw like bunnies. Or, at least, they will when a girl goes missing. Now it's up to Jane and her angels to crack the case, bring the girl home, and save the day. ...and this time, she might find that helping gets her what she's really wanted all along. *Fundamentals of Nanotechnology* Springer Science & Business Media

The fourth edition of "Principles and Applications of Electrical Engineering" provides comprehensive coverage of the principles of electrical, electronic, and electromechanical engineering to non-electrical engineering majors. Building on the success of previous editions, this text focuses on relevant and practical applications that will appeal to all engineering students.

Principles and Applications (with Companion CD-ROM), 2nd Edition John Wiley & Sons

This basic source for identification of U.S. manufacturers is arranged by product in a large multi-volume set. Includes: Products & services, Company profiles and Catalog file.

Heaven's Embrace CRC Press

As our knowledge of microelectromechanical systems (MEMS) continues to grow, so does The MEMS Handbook. The field has changed so much that this Second Edition is now available in three volumes. Individually, each volume provides focused, authoritative treatment of specific areas of interest. Together, they comprise the most comprehensive collection of MEMS knowledge available, packaged in an attractive slipcase and offered at a substantial savings. This best-selling handbook is now more convenient than ever, and its coverage is unparalleled. The third volume, MEMS: Applications, offers a broad overview of current, emerging, and possible future MEMS applications. It surveys inertial sensors, micromachined pressure sensors, surface micromachined devices, microscale vacuum pumps, reactive control for skin-friction reduction, and microchannel heat sinks, among many others. Two new chapters

discuss microactuators and nonlinear electrokinetic devices. This book is vital to understanding the current and possible capabilities of MEMS technologies. MEMS: Applications comprises contributions from the foremost experts in their respective specialties from around the world. Acclaimed author and expert Mohamed Gad-el-Hak has again raised the bar to set a new standard for excellence and authority in the fledgling fields of MEMS and nanotechnology.