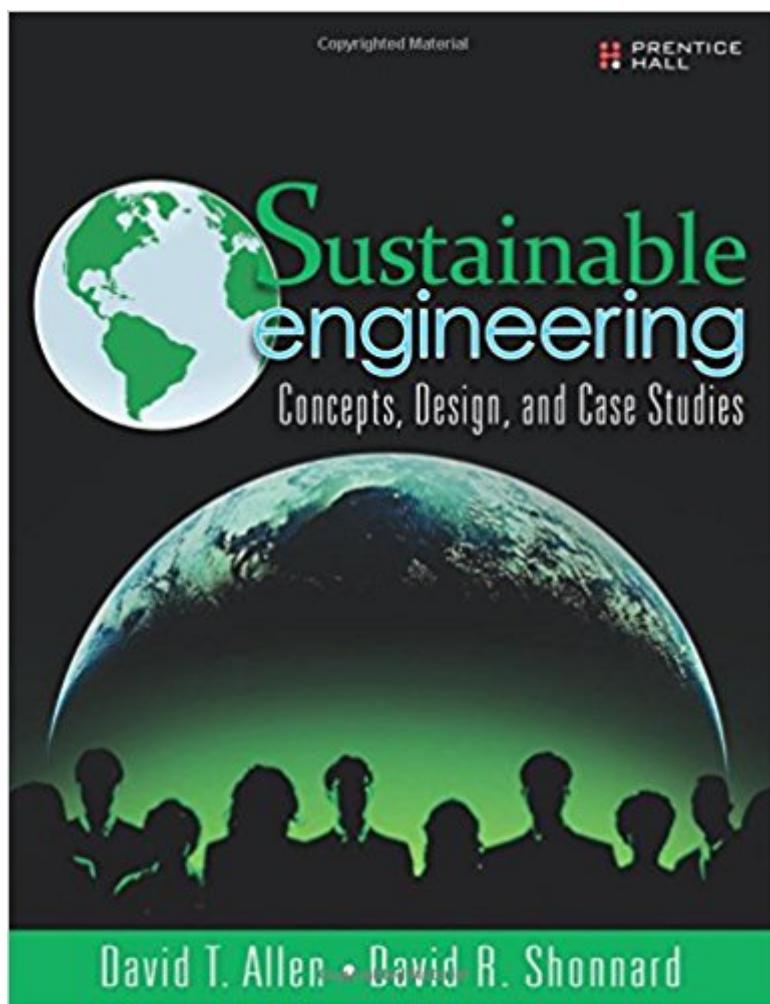


The book was found

Sustainable Engineering: Concepts, Design And Case Studies



Synopsis

Assessing Engineering Designs for Environmental, Economic, and Social Impact Engineers will play a central role in addressing one of the twenty-first century's key challenges: the development of new technologies that address societal needs and wants within the constraints imposed by limited natural resources and the need to protect environmental systems. To create tomorrow's sustainable products, engineers must carefully consider environmental, economic, and social factors in evaluating their designs. Fortunately, quantitative tools for incorporating sustainability concepts into engineering designs and performance metrics are now emerging. Sustainable Engineering introduces these tools and shows how to apply them.

Building on widely accepted principles they first introduced in Green Engineering, David T. Allen and David R. Shonnard discuss key aspects of designing sustainable systems in any engineering discipline. Their powerful, unified approach integrates essential engineering and quantitative design skills, industry perspectives, and case studies, enabling engineering professionals, educators, and students to incorporate sustainability throughout their work. Coverage includes

- A concise review of the natural resource and environmental challenges engineers face when designing for sustainability
- Analysis and legislative frameworks for addressing environmental issues and sustainability
- Methods for identifying green and sustainable materials
- Principles for improving the sustainability of engineering designs
- Tools for evaluating sustainable designs and monetizing their benefits

Book Information

Paperback: 240 pages

Publisher: Prentice Hall; 1 edition (December 30, 2011)

Language: English

ISBN-10: 0132756544

ISBN-13: 978-0132756549

Product Dimensions: 6.9 x 0.6 x 9 inches

Shipping Weight: 13.6 ounces (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #153,180 in Books (See Top 100 in Books) #20 in Books > Engineering & Transportation > Engineering > Design #59 in Books > Textbooks > Engineering > Environmental Engineering #86 in Books > Textbooks > Engineering > Chemical Engineering

Customer Reviews

Dr. David T. Allen is the Gertz Regents Professor of Chemical Engineering, and the director of the Center for Energy and Environmental Resources, at the University of Texas at Austin. He is the author of multiple books and hundreds of scientific papers in areas ranging from coal liquefaction and heavy oil chemistry to the chemistry of urban atmospheres. The quality of his work has been recognized by research awards from the National Science Foundation, the AT&T Foundation, the American Institute of Chemical Engineers, the Association of Environmental Engineering and Science Professors, and the State of Texas. The findings from his research have been used to guide air quality policy development, and he has served on the U.S. EPA's Science Advisory Board and the National Research Council's Board on Environmental Studies and Toxicology, addressing issues at the interface between science, engineering, and public policy. For the past two decades, his work has also focused on the development of materials for environmental education, including coauthoring the textbook *Green Engineering: Environmentally Conscious Design of Chemical Processes*. He has won teaching awards at the University of Texas and UCLA. Dr. Allen received his B.S. in chemical engineering, with distinction, from Cornell University in 1979. His M.S. and Ph.D. degrees in chemical engineering were awarded by the California Institute of Technology in 1981 and 1983. He has held visiting faculty appointments at the California Institute of Technology, the University of California, Santa Barbara, and the Department of Energy.

Dr. David R. Shonnard is Robbins Professor in the Department of Chemical Engineering at Michigan Technological University and director of the Sustainable Futures Institute. He received a B.S. in chemical/metallurgical engineering from the University of Nevada, Reno, in 1983; an M.S. in chemical engineering from the University of California, Davis, in 1985; a Ph.D. from the University of California, Davis, in 1991; postdoctoral training in bioengineering at the Lawrence Livermore National Laboratory from 1990 to 1993; and he was a visiting instructor at the University of California at Berkeley in 2003. His experiences in life-cycle assessment (LCA) methods and applications include a one-year sabbatical at the Eco-efficiency Analysis Group at BASF AG in Ludwigshafen, Germany. He has been on the faculty in the Department of Chemical Engineering at Michigan Technological University since 1993. Dr. Shonnard has more than twenty years of academic experience in sustainability issues in the chemical industry and Green Engineering. He is coauthor of the textbook *Green Engineering: Environmentally Conscious Design of Chemical Processes*, published by Prentice Hall in 2002. His current research interests focus on investigations of new forest-based biorefinery processes for production of transportation fuels, such as cellulosic ethanol and pyrolysis-based biofuels, from woody biomass using recombinant DNA and other approaches. Another active research area is LCA of biofuels and other biorefinery

products to determine greenhouse gas emissions and net energy balances. He has contributed to National Academy of Sciences publications on green chemistry/engineering/sustainability in the chemical industry. Dr. Shonnard has coauthored 70 peer-reviewed publications and received numerous honors and awards for teaching and research into environmental issues of the chemical industry, including the Ray W. Fahien Award from ASEE (2003). He is a recipient of the NSF/Lucent Technologies Foundation Industrial Ecology Research Fellowship (1998) for research that integrates environmental impact assessment with process design.

I got this for a college course in sustainable engineering. I like the author's examples. Life Cycle Assessments are hard to quantify because it's all about where you draw the boundary conditions. I think the author does a great job of not getting too carried away, but including the right amount of components. Also, the book reads very easy, like a book should. Some engineering books read more like technical journal articles. This book starts from the absolute basics and works up from that.

[Download to continue reading...](#)

Sustainable Engineering: Concepts, Design and Case Studies System Engineering Analysis, Design, and Development: Concepts, Principles, and Practices (Wiley Series in Systems Engineering and Management) Case Studies In Nursing Ethics (Fry, Case Studies in Nursing Ethics) Case Studies in Immunology: A Clinical Companion (Geha, Case Studies in Immunology: A Clinical Companion) H. J. Bruyere's 100 Case Studies (100 Case Studies in Pathophysiology [Paperback])(2008) Case Studies in Cardiovascular Critical Care Nursing (Aspen Series of Case Studies in Critical Care Nursing) Gravity Sanitary Sewer Design and Construction (ASCE Manuals and Reports on Engineering Practice No. 60) (Asce Manuals and Reports on Engineering ... Manual and Reports on Engineering Practice) Seismic Design and Assessment of Bridges: Inelastic Methods of Analysis and Case Studies (Geotechnical, Geological and Earthquake Engineering) Engineering Materials 3: Materials Failure Analysis: Case Studies and Design Implications (International Series on Materials Science and Technology) (v. 3) Graphic Design Success: Over 100 Tips for Beginners in Graphic Design: Graphic Design Basics for Beginners, Save Time and Jump Start Your Success (graphic ... graphic design beginner, design skills) G.Dieter's Li.Schmidt's Engineering 4th (Fourth) edition(Engineering Design (Engineering Series) [Hardcover])(2008) Chirelstein's Federal Income Taxation: A Law Student's Guide to the Leading Cases and Concepts (Concepts and Insights) (Concepts and Insights Series) Concepts and Case Analysis in the Law of Contracts (Concepts and Insights) Scooby-Doo Set of 8 Mystery Chapter Books (Haunted Castle ~

Snow Monster ~ Fairground Phantom ~ Spooky Strikeout ~ Case of the Haunted Hound ~ Case of the Living Doll ~ Case of the Spinning Spider ~ The Creepy Camp) Sustainable Logistics and Supply Chain Management: Principles and Practices for Sustainable Operations and Management Public Interest Design Practice Guidebook: SEED Methodology, Case Studies, and Critical Issues (Public Interest Design Guidebooks) Becoming a Green Building Professional: A Guide to Careers in Sustainable Architecture, Design, Engineering, Development, and Operations Sustainable Infrastructure: The Guide to Green Engineering and Design Urban Homesteading: Become a Self Sustainable Urban Homesteader to Get off the Grid, Grow Food, and Free Yourself (Urban Homesteading: A Complete Guide ... a Self Sustainable Urban Homesteader) Tropical Soils: Properties and Management for Sustainable Agriculture (Topics in Sustainable Agronomy)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)