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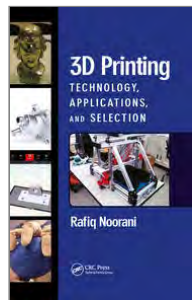


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3D Printing

Technology, Applications, and Selection



Rafiq Noorani

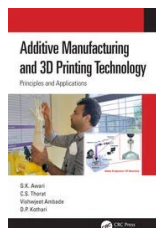
3D Printing is a faster, more cost-effective method for building prototypes from three-dimensional computer-aided design (CAD) drawings. 3D Printing provides a fundamental overview of the general product design and manufacturing process and presents the technology and application for designing and fabricating parts in a format that makes learning easy. This user-friendly book clearly covers the 3D printing process for designers, teachers, students, and hobbyists and can also be used as a reference book in a product design and process development.

CRC Press
March 2021 : 293pp
Pb: 978-0-367-78196-5 £46.99
Hb: 978-1-498-78375-0 £115
eBook: 978-1-315-15549-4

* For full contents and more information, visit www.routledge.com/9780367781965

Additive Manufacturing and 3D Printing Technology

Principles and Applications



G. K. Awari Gov. Polytechnic, Nagpur
C. S. Thorat Gov. Polytechnic, Nagpur
Vishwjeet Ambade Tulsiramji Gaikwad-Patil College of Eng. and Tech
D. P. Kothari Visvesvaraya National Institute of Tech.

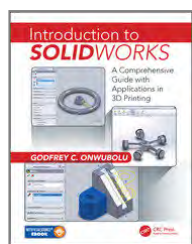
This standard textbook consists of the construction and working details of all modern as well as fundamentals of Additive Manufacturing and 3D Printing technology processes and machines. The book is written so that it will help the reader to understand the systems fundamentally. The reader of any level irrespective of basic knowledge will be able to understand this book. With the block diagrams, self-explanatory figures, chapter questions, and photographs of lab developed prototypes, along with case studies, this new textbook will be useful to students studying courses in Mechanical, Production, Design, and Electrical Engineering.

CRC Press
March 2025 : 309pp
Pb: 978-0-367-69754-9 £45.99
Hb: 978-0-367-43622-3 £115
eBook: 978-1-003-01385-3

* For full contents and more information, visit www.routledge.com/9780367697549

Introduction to SolidWorks

A Comprehensive Guide with Applications in 3D Printing



Godfrey C. Onwubolu Sheridan Institute of Technology and Advanced Learning, Brampton, Ontario, Canada

This senior undergraduate level textbook is written for Advanced Manufacturing, Additive Manufacturing, as well as CAD/CAM courses. Its goal is to assist students in colleges and universities, designers, engineers, and professionals interested in using SolidWorks as the design and 3D printing tool for emerging manufacturing technology for practical applications. This textbook will bring a new dimension to SolidWorks by introducing readers to the role of SolidWorks in the relatively new manufacturing paradigm shift, known as 3D-Printing which is based on Additive Manufacturing (AM) technology.

CRC Press
December 2016 : 1193pp
Hb: 978-1-498-73119-5 £115
eBook: 978-1-315-38250-0

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4TH EDITION

Behavioral Research and Analysis

An Introduction to Statistics within the Context of Experimental Design, Fourth Edition



Max Vercruyssen Hawaii Academy, Honolulu, USA
Hal W. Hendrick Castle Pines Village, Colorado, USA

This text provides an overview of basic statistical methods used in behavioral research, experimental design, and report writing. It uniquely integrates statistics within the context of experimental design and simplifies the process of planning, conducting, analyzing, and preparing an experimental or research study report. Completely updated, this fourth edition presents new statistical procedures and new examples in sport science, public health, gerontology, and biomedicine. It also reflects the changes of the APA guidebook and includes SAS statistical software in the end-of-chapter exercises.

CRC Press

February 2018 : 299pp

Pb: 978-1-138-07318-0 £57.99

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eBook: 978-0-429-11286-7

* For full contents and more information, visit www.routledge.com/9781138073180

2ND EDITION

Assembly Automation and Product Design



Geoffrey Boothroyd Boothroyd Dewhurst Inc.,
Wakefield, Rhode Island, USA

Series: Manufacturing Engineering and Materials Processing

The design for assembly (DFA) method has become a widely used way for companies to introduce competitive designs at reduced costs. This text places the consideration and application of automatic assembly in the context of DFA, addressing product design for both automated and manual assembly processes. The author enumerates the components, processes, performance, and comparative economics of several types of automatic assembly systems. To this end, the book includes specific information on equipment such as transfer devices, parts feeders, feed tracks, placing mechanisms, and robots. This is an ideal reference and guide for manufacturing, product design, mechanical, and industrial engineers.

CRC Press

June 2005 : 530pp

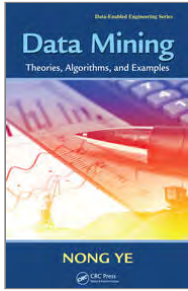
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eBook: 978-0-429-12125-8

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Data Mining

Theories, Algorithms, and Examples



Nong Ye

Series: Human Factors and Ergonomics

Written for those with a science and engineering background, this book introduces and explains a comprehensive set of data mining techniques from various data mining fields. Concepts and methodologies are illustrated through numerous examples of data mining applications in cyber attack detection, discovery of neuronal population dynamics, and manufacturing quality control. Other topics include methodologies for mining classification and prediction patterns, mining clustering, and mining data reduction patterns and sequential and time series patterns.

CRC Press

March 2017 : 349pp

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eBook: 978-0-429-06776-1

* For full contents and more information, visit www.routledge.com/9781138073661

Cost Analysis for Engineers and Scientists



Fariborz Tayyari Department of IMET, Bradley University

Series: Manufacturing and Production Engineering

This textbook introduces the fundamentals accounting information systems and manufacturing costs. It also presents product costing and manufacturing cost allocation to individual as well as joint products. The concepts and applications of cost-volume-profit and breakeven analysis for single-product and multiple-products are also discussed. A solutions manual and PowerPoint slides are available for qualified textbook adoptions.

CRC Press

October 2024 : 230pp

Pb: 978-1-032-14711-6 £120

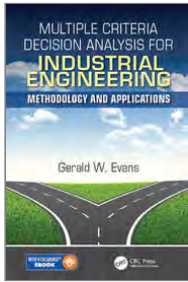
Hb: 978-1-138-36228-4 £120

eBook: 978-0-429-43216-3

* For full contents and more information, visit www.routledge.com/9781032147116

Multiple Criteria Decision Analysis for Industrial Engineering

Methodology and Applications



Gerald William Evans University of Louisville, Kentucky, USA

Series: Operations Research Series

This adv. undergraduate and graduate textbook prepares the industrial engineering student on how to deal with a variety of problems that require making decisions involving multiple criteria and/or uncertainty/risk. This book is designed for students who are studying industrial engineering, but it could also be used in programs designed for business/mgmt. as well. Comprehensive in coverage and related areas such as simulation optimization. It also emphasis applications involving industrial engineering, engineering economics, location and layout design, quality mgmt., project mgmt., healthcare mgmt. & operations, and the use of simulation for system design & operations in general.

CRC Press

June 2016 : 467pp

Hb: 978-1-498-73982-5 £97.99

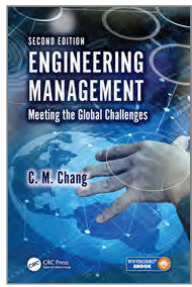
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Engineering Management

Meeting the Global Challenges, Second Edition



C. M. Chang University at Buffalo, New York, USA
Lucy Lunevich

Since publication of the first edition, the world has continued to become an increasingly competitive and fast moving global economy. The new millennium brings in rapid change in customer needs and wants, enhanced mobile communications, stiffer competition in the marketplace, and advances in various technologies. These combined spatial and temporal effects require engineering professionals and engineering managers to be properly prepared in meeting the unprecedented challenges of our globalized economy. This was the focus of the first edition of the book. This second edition retains the same central theme.

CRC Press

June 2016 : 576pp

Hb: 978-1-498-73007-5 £185

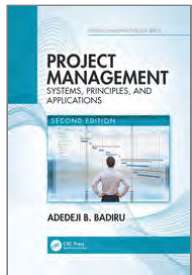
eBook: 978-1-315-38212-8

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2ND EDITION

Project Management

Systems, Principles, and Applications, Second Edition



Adedeji B. Badiru

The goal of the new edition is to continue with a systems view of the world. For a more robust and worldwide market dissemination, the new edition has changed to a reference book. The project systems approach to project management, is needed in executing projects across countries and across cultures, which is a crucial requirement in today's globalized and intertwined economics. The book uses ample graphical representations to clarify the concepts and techniques presented. The case examples help to reinforce the topics covered. Several illustrative examples and practice exercises are included. Each chapter is updated and new chapters include Project Simulation and Project Templates.

CRC Press

March 2021 : 544pp

Pb: 978-0-367-77973-3 £48.99

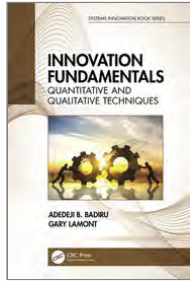
Hb: 978-1-138-74086-0 £165

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Innovation Fundamentals

Quantitative and Qualitative Techniques



Adedeji B. Badiru Air Force Institute of Technology, OH
Gary Lamont Air Force Institute of Technology, OH

Series: Systems Innovation Book Series

This book uses a systems-based approach to show how innovation is pervasive in all facets of endeavors, including business, industrial, government, the military, and even academia. This book presents chapters that provide techniques and methodologies for achieving the transfer of science and technology assets for innovation applications. This book is written for the textbook market as well as for the professional reader within the engineering, business, and management fields.

CRC Press

October 2024 : 276pp

Pb: 978-1-032-05157-4 £48.99

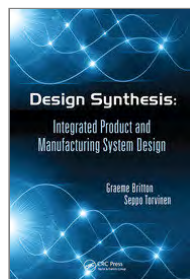
Hb: 978-0-367-81918-7 £135

eBook: 978-1-003-02200-8

* For full contents and more information, visit www.routledge.com/9781032051574

Design Synthesis

Integrated Product and Manufacturing System Design



Graeme Arthur Britton Raffles University System, Singapore, **Seppo Torvinen** Tampere University of Technology, Kalvanto, Finland

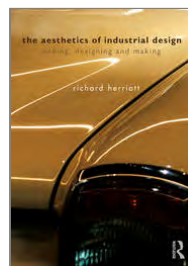
This textbook provides a conceptual framework and methodologies for integrating product design and manufacturing. The readers should be able to use the framework and methodologies provided to jointly optimize the design/re-design of new products and manufacturing systems to produce better quality products faster and cheaper. The textbook includes homework problems and numerous real life examples. An SM and PP Slides will go along with the book to enhance textbook adoptions.

CRC Press
June 2018 : 382pp
Pb: 978-1-138-07374-6 £57.99
Hb: 978-1-439-88164-4 £160
eBook: 978-0-429-11197-6

* For full contents and more information, visit www.routledge.com/9781138073746

The Aesthetics of Industrial Design

Seeing, Designing and Making



Richard Herriott

This textbook introduces design students to key principles of three-dimensional form, bridging aesthetics and practical design objectives. It explores how we see and what it is that characterises visually appealing and satisfactory design. Written by an experienced designer, educator and researcher, the book equips students with the knowledge and understanding of how aesthetically superior design is distinct from lesser work. It explains the key principles and concepts they can incorporate into their own designs, encourages readers to investigate and experiment with real design problems, and enables them to verbally communicate their design intentions.

Routledge
December 2021 : 224pp
Pb: 978-1-032-02418-9 £36.99
Hb: 978-1-032-02419-6 £145
eBook: 978-1-003-18330-3

* For full contents and more information, visit www.routledge.com/9781032024189

Future Autonomous Road Vehicles



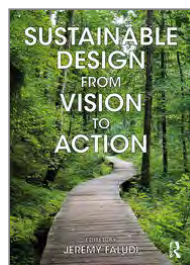
Joseph Giacomini

This book provides a comprehensive overview of the past, present and future of autonomous road vehicles for professionals and students. It brings together the key historical developments in autonomous road vehicle design and the primary explorations of the design possibilities from science fiction. It also introduces five of the most popular future-facing speculative approaches used by designers, with science fiction prototyping identified as best suited to autonomous road vehicle application. Of use to those interested in the psychological, sociological and ethical factors involved in automotive design, human centred design, industrial design and technology.

Routledge
May 2024 : 230pp
Pb: 978-1-032-72421-8 £34.99
Hb: 978-1-032-72422-5 £145
eBook: 978-1-032-72423-2

* For full contents and more information, visit www.routledge.com/9781032724218

Sustainable Design from Vision to Action



Edited by **Jeremy Faludi**

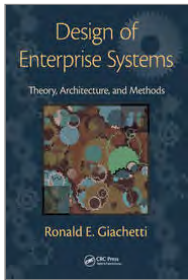
This book offers a comprehensive guide to the sustainable design of products, services, or related systems. It goes beyond concept explanations to provide you with practical instructions on how to apply the tools and methods to your own designs. This highly illustrated text will provide an excellent introduction to sustainable design in practice for industrial design and mechanical engineering students. It will also be useful for professional designers, engineers, and managers in industry.

Routledge
July 2025 : 462pp
Pb: 978-1-032-82474-1 £39.99
Hb: 978-1-032-82475-8 £145

* For full contents and more information, visit www.routledge.com/9781032824741

Design of Enterprise Systems

Theory, Architecture, and Methods



Ronald Giachetti Florida International University, Miami, USA

Specifically written for graduate and undergraduate courses, this book provides the knowledge and skills necessary to lead enterprise engineering projects. The book describes a systematic methodology to design an enterprise system and presents an enterprise architecture that has three views of process, information, and organization. The text includes methods to analyze and design each view and then demonstrates how to integrate them to arrive at the overall enterprise design.

CRC Press

June 2021 : 448pp

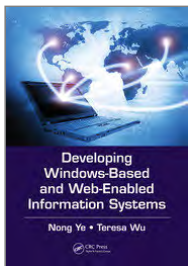
Pb: 978-1-032-09943-9 £48.99

Hb: 978-1-439-81823-7 £120

eBook: 978-0-429-11220-1

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Developing Windows-Based and Web-Enabled Information Systems



Nong Ye Arizona State University, **Teresa Wu** Arizona State University, Phoenix, USA

Series: Data-Enabled Engineering

This textbook covers concepts, methods, programming languages and software tools of designing and developing both Windows-based and Web-based information systems, specifically data modeling and design methods. It is designed to enable students and professionals in engineering, business and science fields to learn up-to-date concepts, methods and software tools for developing Windows and web-based information systems.

CRC Press

March 2017 : 602pp

Pb: 978-1-138-07377-7 £62.99

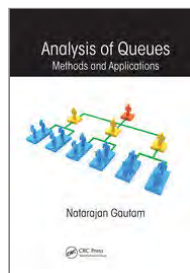
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Analysis of Queues

Methods and Applications



Natarajan Gautam Texas A&M, College Station, USA

Series: Operations Research Series

Analysis of queues is used in a variety of domains including call centers, web servers, internet routers, manufacturing and production, telecommunications, transportation, hospitals and clinics, restaurants, and theme parks.

Combining elements of classical queueing theory with some of the recent advances in studying stochastic networks, this book covers a broad range of applications. It contains numerous real-world examples and industrial applications in all chapters. The text is suitable for graduate courses, as well as researchers, consultants and analysts that work on performance modeling or use queueing models as analysis tools.

CRC Press

March 2017 : 802pp

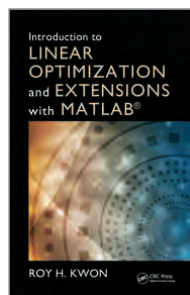
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eBook: 978-0-429-09359-3

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Introduction to Linear Optimization and Extensions with MATLAB®



Roy H. Kwon University of Toronto, Canada

Series: Operations Research Series

Filling the need for an introductory book on linear programming that discusses the important ways to mitigate parameter uncertainty, this book includes two major ways of including parameter uncertainty: stochastic linear programming and robust linear optimization. It offers a vigorous development of linear programming theory and methods by presenting basics before theory. It also presents financial optimization case studies that consolidate the material presented within the book. A student solutions manual is provided, as well as MATLAB exercises and code accessible by website. MATLAB exercises, a student solutions manual, and an extensive bibliography are included.

CRC Press

September 2013 : 362pp

Hb: 978-1-439-86263-6 £130

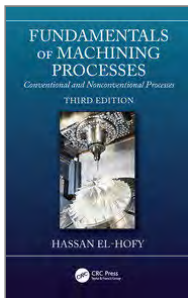
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3RD EDITION

Fundamentals of Machining Processes

Conventional and Nonconventional Processes, Third Edition

**Hassan El-Hofy**

Written by an expert with over 40 years of experience in research and teaching machining and related topics, this new edition textbook presents the principles and theories of material removal and applications for conventional and nonconventional machining processes. The new edition is ideal for undergraduate students in production, materials, industrial, mechatronics, marine, mechanical, and manufacturing engineering programs, and also useful for graduate programs related to higher-level machining topics, as well as professional engineers and technicians. All chapters will be updated, with 4 new chapters added.

CRC Press

November 2018 : 602pp

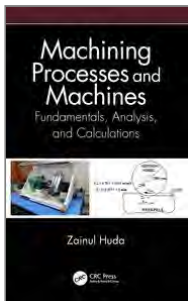
Hb: 978-1-138-33490-8 £185

eBook: 978-0-429-44332-9

* For full contents and more information, visit www.routledge.com/9781138334908

Machining Processes and Machines

Fundamentals, Analysis, and Calculations

**Zainul Huda** Department of Mechanical Engineering, King Abdulaziz University, Jeddah, Saudi Arabia

This textbook covers the fundamentals and engineering analysis of conventional and advanced/non-traditional material removal processes along with gear cutting/manufacturing and computer numerically controlled (CNC) machining. It provides a holistic understanding of machining processes and machines in manufacturing; it enables critical thinking through mathematical modeling and problem solving, and offers 200 worked examples/calculations and 70 multiple choice questions on machining operations as well as on CNC machining, with the eBook in color. This unique book is useful to both engineering-degree students and production engineers practicing in manufacturing industry.

CRC Press

October 2024 : 300pp

Pb: 978-0-367-53270-3 £48.99

Hb: 978-0-367-53269-7 £135

eBook: 978-1-003-08120-3

* For full contents and more information, visit www.routledge.com/9780367532703

Mass Customisation and Personalisation in Architecture and Construction

*Edited by* **Poorang Piroozfar** University of Brighton, UK
Frank Piller Aachen University, Germany

Bringing together contributions from some of the most prominent thinkers and practitioners in the field including Kasper S. Vibaek, Steve Kendall, Martin Bechthold, Mitchell M. Tseng, and Masa Noguchi, this book provides an overview of state-of-the-art practice related to the concept of customization and personalization within the built environment. Selected Contents: Part 1: Principles of Mass Customisation Part 2: Enabling Technologies, Designs, and Business Models Part 3: Practical Applications, Prototypes and Experiences Part 4: Future Topics, New Potentials, Emerging Challenges

Routledge

July 2013 : 272pp

Pb: 978-0-415-62284-4 £47.99

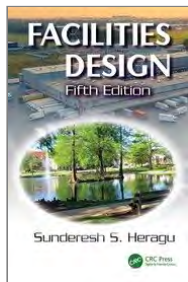
Hb: 978-0-415-62283-7 £155

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5TH EDITION

Facilities Design



Sunderesh S. Heragu Oklahoma State University, Stillwater, USA

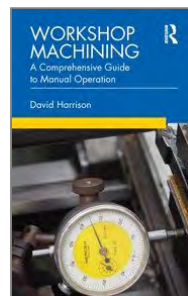
The book presents automated materials handling along with queuing, queuing networks, and basic simulation modeling. The new edition introduces new material that includes topics such as supply chain designing and management, aggregate planning, deterministic inventory control, stochastic inventory control and transportation, logistic, and distribution. The new edition will continue to provide access to Layout-iQ software and data files from the author's own website for many of the numerical examples contained in the book. A solutions manual, PowerPoint slides, and figure, slides are available for qualified textbooks adoptions.

CRC Press
July 2022 : 726pp
Hb: 978-1-032-25805-8 £115
eBook: 978-1-003-28509-0

* For full contents and more information, visit www.routledge.com/9781032258058

Workshop Machining

A Comprehensive Guide to Manual Operation



David Harrison Newcastle College, UK

Workshop Machining is a comprehensive textbook that explains the fundamental principles of manually operating machinery to form shapes in a variety of materials. It bridges the gap between traditional toolmaking skills and programming and operation of CNC machines in a production environment. Everything is covered from the basic machine controls to advanced cutting operations using a wide range of tooling and work holding devices. Theory and practice are shown via mixture of diagrams, text and illustrated worked examples, as well as through exercises.

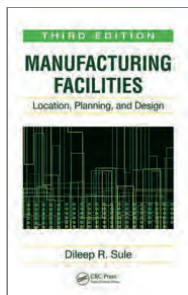
Routledge
December 2021 : 474pp
Pb: 978-0-367-27839-7 £48.99
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eBook: 978-0-429-29819-6

* For full contents and more information, visit www.routledge.com/9780367278397

3RD EDITION

Manufacturing Facilities

Location, Planning, and Design, Third Edition



Dileep R. Sule Louisiana Tech University, Ruston, USA

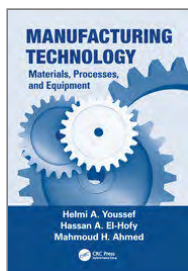
Global competition in manufacturing has made proficient facilities planning an important issue in industrial engineering and technology. From plant layout and materials handling to quality function deployment and design considerations, Manufacturing Facilities covers a wide range of topics crucial to the efficiency of a well-planned facility. Updated and revised, this third edition features new topics including lean manufacturing, agile manufacturing, supply chain effects, aggregate planning, scheduling, resource planning, graph theory, economic evaluation of processes, information technology. This edition also includes new mathematical methods, problems, and layout software.

CRC Press
December 2008 : 824pp
Hb: 978-1-420-04422-5 £175
eBook: 978-0-429-14486-8

* For full contents and more information, visit www.routledge.com/9781420044225

Manufacturing Technology

Materials, Processes, and Equipment



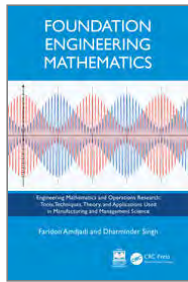
Helmi A. Youssef University of Alexandria, Egypt
Hassan A. El-Hofy University of Alexandria, Egypt
Mahmoud H. Ahmed University of Alexandria, Egypt

This text explores all of the manufacturing processes, materials, and equipment used to convert raw materials into a final product. It presents the most commonly used and recently developed manufacturing methods, along with applications, worked examples, exercises, and review questions. Materials covered include metallics, polymers, ceramics, and glasses. The book discusses heat treatments, smelting of metals, process casting, forming, powder metallurgy, joining processes, and surface technology. It also looks at the environmental aspects related to manufacturing and clean factories and describes trends in surface hardening technology.

CRC Press
March 2017 : 948pp
Pb: 978-1-138-07213-8 £81.99
Hb: 978-1-439-81085-9 £205
eBook: 978-0-429-18489-5

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Faridon Amdjadi , Dharminder Singh

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CRC Press

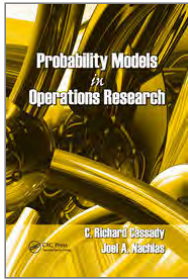
December 2024 : 326pp

Hb: 978-1-032-62740-3 £94.99

eBook: 978-1-032-63069-4

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CRC Press

September 2019 : 224pp

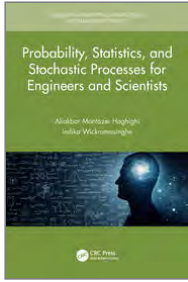
Pb: 978-0-367-38704-4 £65.99

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eBook: 978-0-429-14639-8

* For full contents and more information, visit www.routledge.com/9780367387044

Probability, Statistics, and Stochastic Processes for Engineers and Scientists



Aliakbar Montazer Haghighi Prairie View A&M University, Houston, Texas
Indika Wickramasinghe Prairie View A&M University, TX, US
Emmanuel A. Appiah

Series: Engineering Mathematics and Operations Research

Featuring recent advances in probability, statistics, and stochastic processes, this new textbook presents Probability and Statistics, and an introduction to Stochastic Processes. The book presents key information for understanding the essential aspects of basic probability theory and concepts of reliability as an application. The purpose of this book is to provide an option in this field that combines these areas in one book, balances both theory and practical applications, and also keeps the practitioners in mind.

CRC Press

July 2022 : 634pp

Pb: 978-0-367-50086-3 £65.99

Hb: 978-0-815-37590-6 £155

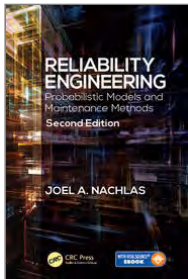
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2ND EDITION

Reliability Engineering

Probabilistic Models and Maintenance Methods, Second Edition



Joel A. Nachlas Virginia Polytechnic Institute and State University, Department of Industrial & Systems Engineering, Blacksburg, USA

Without proper reliability and maintenance planning, even the most efficient and seemingly cost-effective designs can incur enormous expenses due to repeated or catastrophic failure and subsequent search for the cause. Today's engineering students face increasing pressure from employers, customers, and regulators to produce cost-efficient designs that are less prone to failure and that are safe and easy to use. An understanding of reliability principles and maintenance planning can help accomplish these goals. With a blend of mathematical rigor and readability, this book is the ideal introductory textbook for graduate students.

CRC Press

December 2016 : 394pp

Hb: 978-1-498-75247-3 £145

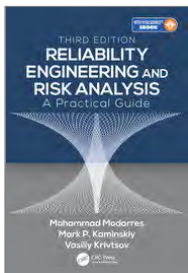
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3RD EDITION

Reliability Engineering and Risk Analysis

A Practical Guide, Third Edition



Mohammad Modarres University of Maryland, College Park, USA
Mark P. Kaminskiy NASA Goddard Space Flight Center, Greenbelt, Maryland, USA
Vasily Krivtsov Ford Motor Company, Dearborn, Michigan, USA

This undergraduate and graduate textbook provides a practical and comprehensive overview of reliability and risk analysis techniques. Written for engineering students and practicing engineers, the book is multi-disciplinary in scope. The new edition has new topics in classical confidence interval estimation; Bayesian uncertainty analysis; models for physics-of-failure approach to life estimation; extended discussions on the generalized renewal process and optimal maintenance; and further modifications, updates, and discussions. The book includes examples to clarify technical subjects and many end of chapter exercises. PowerPoint slides and a Solutions Manual are also available.

CRC Press

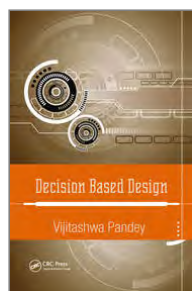
December 2016 : 522pp

Hb: 978-1-498-74587-1 £97.99

eBook: 978-1-315-38242-5

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Decision Based Design



Vijitashwa Pandey

In a presentation that formalizes what makes up decision-based design, this book defines the major concepts that go into product realization. It presents all major concepts in design decision making in an integrated way and covers the fundamentals of decision analysis in engineering design. It also trains engineers to understand the impacts of design decision. The author teaches concepts in demand modeling and customer preference modeling and provides examples. This book teaches most fundamental concepts encountered in engineering design like: concept generation, multiattribute decision analysis, reliability engineering, design optimization, simulation, and demand modeling.

CRC Press
March 2021 : 284pp
Pb: 978-0-367-78375-4 £48.99
Hb: 978-1-439-88232-0 £130
eBook: 978-0-429-16130-8

* For full contents and more information, visit www.routledge.com/9780367783754

2ND EDITION

Emotionally Durable Design

Objects, Experiences and Empathy



Jonathan Chapman University of Brighton, UK

Emotionally Durable Design presents counterpoints to our 'throwaway society' by developing powerful design tools, methods and frameworks that build resilience into relationships between people and things. This second edition features pull-out quotes, illustrated product examples, a running glossary and comprehensive stand firsts. It is a daring call to arms for professional designers, educators, researchers and students from in a range of disciplines from product design to architecture; framing an alternative genre of design that reduces the consumption and waste of resources by increasing the durability of relationships between people and things.

Routledge
May 2015 : 224pp
Pb: 978-0-415-73215-4 £45.99
Hb: 978-0-415-73216-1 £180
eBook: 978-1-315-73880-2

* For full contents and more information, visit www.routledge.com/9780415732154

Future Autonomous Road Vehicles



Joseph Giacomin

This book provides a comprehensive overview of the past, present and future of autonomous road vehicles for professionals and students. It brings together the key historical developments in autonomous road vehicle design and the primary explorations of the design possibilities from science fiction. It also introduces five of the most popular future-facing speculative approaches used by designers, with science fiction prototyping identified as best suited to autonomous road vehicle application. Of use to those interested in the psychological, sociological and ethical factors involved in automotive design, human centred design, industrial design and technology.

Routledge
May 2024 : 230pp
Pb: 978-1-032-72421-8 £34.99
Hb: 978-1-032-72422-5 £145
eBook: 978-1-032-72423-2

* For full contents and more information, visit www.routledge.com/9781032724218

Product Configurators

Tools and Strategies for the Personalization of Objects



Edited by **Fabio Schillaci**

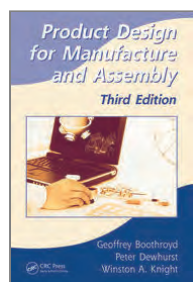
This book provides a source of inspiration and a manual for designers, entrepreneurs and professionals who are looking into the practical application of product configurators. The book delves into the practical application of configurators using case studies of selected firms that present their most significant works. It offers the reader tips, suggestions, technical details and critical issues which need to be considered, from experienced actors and pioneers worldwide, which include: Unfold, Belgium; In-flexions, France; Nervous System, USA; Okinlab, Germany; ZeroLight, United Kingdom and much more.

Routledge
November 2017 : 264pp
Pb: 978-0-415-79013-0 £56.99
Hb: 978-0-415-79012-3 £145
eBook: 978-1-315-21357-6

* For full contents and more information, visit www.routledge.com/9780415790130

3RD EDITION

Product Design for Manufacture and Assembly



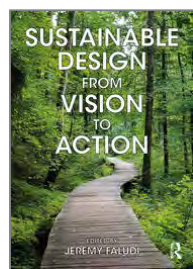
Geoffrey Boothroyd Boothroyd Dewhurst Inc., Wakefield, Rhode Island, USA
Peter Dewhurst University of Rhode Island, Kingston, USA
Winston A. Knight University of Rhode Island, Kingston, USA

Now in its third edition, this volume features new problem sets and student assignments, making this respected reference work now even more suitable for use in product design and design for manufacture courses. Chapters have been updated from previous editions with more recent case studies of the application of design for manufacture and assembly (DFMA) techniques, important industry changes, and emphasis on current trends such as design for power injection molding and surface mount devices. Each chapter also includes updated cost information on materials, labor, and machine operations.

CRC Press
December 2010 : 712pp
Hb: 978-1-420-08927-1 £155
eBook: 978-0-429-14296-3

* For full contents and more information, visit www.routledge.com/9781420089271

Sustainable Design from Vision to Action



Edited by **Jeremy Faludi**

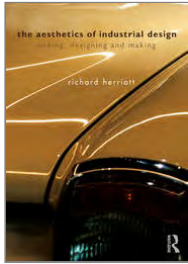
This book offers a comprehensive guide to the sustainable design of products, services, or related systems. It goes beyond concept explanations to provide you with practical instructions on how to apply the tools and methods to your own designs. This highly illustrated text will provide an excellent introduction to sustainable design in practice for industrial design and mechanical engineering students. It will also be useful for professional designers, engineers, and managers in industry.

Routledge
July 2025 : 462pp
Pb: 978-1-032-82474-1 £39.99
Hb: 978-1-032-82475-8 £145

* For full contents and more information, visit www.routledge.com/9781032824741

The Aesthetics of Industrial Design

Seeing, Designing and Making



Richard Herriott

This textbook introduces design students to key principles of three-dimensional form, bridging aesthetics and practical design objectives. It explores how we see and what it is that characterises visually appealing and satisfactory design. Written by an experienced designer, educator and researcher, the book equips students with the knowledge and understanding of how aesthetically superior design is distinct from lesser work. It explains the key principles and concepts they can incorporate into their own designs, encourages readers to investigate and experiment with real design problems, and enables them to verbally communicate their design intentions.

Routledge

December 2021 : 224pp

Pb: 978-1-032-02418-9 £36.99

Hb: 978-1-032-02419-6 £145

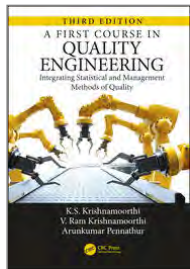
eBook: 978-1-003-18330-3

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3RD EDITION

A First Course in Quality Engineering

Integrating Statistical and Management Methods of Quality, Third Edition



K.S. Krishnamoorthi Bradley University, Peoria, Illinois, USA, **V. Ram Krishnamoorthi** University of Chicago Medicine, Illinois, USA

The book is a compilation of essential methodologies that have been developed over several decades for obtaining the needs of customers, designing a product that meets those needs, designing the processes to make the product, making the product according to those designs, and packaging and delivering the product so the customer receives the product they will be satisfied with. These methodologies use fundamentals for many disciplines, which can be broadly classified as statistical and management methods. This book includes the methods from both these areas in a balanced way so that those who are trained using this book will be able to make and deliver products that will meet customer needs.

CRC Press

September 2018 : 626pp

Hb: 978-1-498-76420-9 £175

eBook: 978-0-429-50562-1

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2ND EDITION

Total Manufacturing Assurance

Controlling Product Quality, Reliability, and Safety



Douglas Brauer MudTurtle Industries, LLC/Florida State College at Jacksonville, **John Cesarone** Illinois Institute of Technology

Using a holistic approach to manufacturing operations this new edition focuses on analytics and performance assessment along with Industry 4.0 and the role it plays in advanced manufacturing. The textbook covers strategic planning, innovation, and engineering economics, as well as the manufacturing process, materials, and operations. Product manufacturing system reliability, maintainability, availability, quality, and safety along with financial issues in decision making and engineering analysis are all captured in this new edition.

CRC Press

October 2024 : 372pp

Pb: 978-1-032-07637-9 £45.99

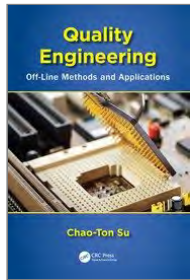
Hb: 978-1-032-07636-2 £97.99

eBook: 978-1-003-20805-1

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Quality Engineering

Off-Line Methods and Applications



Chao-Ton Su National Tsing Hua University, Hsinchu, Taiwan

Quality is an essential determinant for achieving overall business success. *Quality Engineering: Off-Line Methods and Applications* discusses the use of quality engineering methods and other modern techniques to ensure design optimization in the product and process design stages for a company. Starting with the basics, this book presents an overall picture of quality engineering. It helps readers understand quality engineering methods such as DOE, Taguchi, RSM, and computational intelligence approaches. It also provides extensive examples and case studies, without extensive mathematical treatments, making it accessible to a broad audience.

CRC Press

February 2013 : 394pp

Hb: 978-1-466-56947-8 £42.99

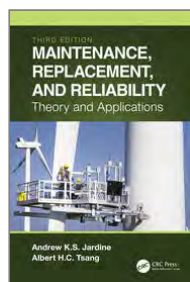
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3RD EDITION

Maintenance, Replacement, and Reliability

Theory and Applications



Andrew K. S. Jardine University of Toronto, Ontario, Canada, **Albert H. C. Tsang** The Hong Kong Polytechnic University

Since the publication of the second edition in 2013, there have been an increasing interest in asset management globally as evidenced by a series of international standards on asset management systems, to achieve excellence in asset management. This can not be achieved without high quality data and the tools for data interpretation. The importance of such requirements is widely recognized by industry. This new edition textbook can be used by undergraduate or post graduate courses on physical asset management. Problem sets with answers are provided at the end of each chapter, and additional resources are available, including an extensive set of PowerPoint slides, and a solutions manual.

CRC Press

September 2021 : 412pp

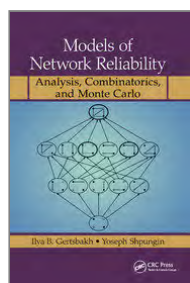
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eBook: 978-0-429-02156-5

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Models of Network Reliability

Analysis, Combinatorics, and Monte Carlo



Ilya B. Gertsbakh, **Yoseph Shpungin**

This volume provides an introduction to Monte Carlo methods and a exposition of Reliability Theory ideas. It investigates a collection of principal network reliability models and provides solutions for principal network reliability problems as Monte Carlo algorithms. Written by reliability experts with significant teaching experience, this text serves the needs of software, industrial, and reliability engineering students, researchers, and engineers. Stressing intuitive explanations and providing detailed proofs of difficult statements, the book offers end-of-chapter exercises with worked examples making it ideal for self study.

CRC Press

September 2019 : 219pp

Pb: 978-0-367-38465-4 £65.99

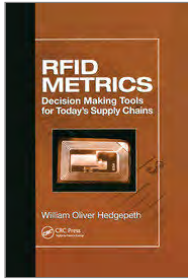
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RFID Metrics

Decision Making Tools for Today's Supply Chains



William Oliver Hedgepeth

Based on the author's experience testing and implementing RFID technology in both industrial and military cases, this text explains how to evaluate the need for this technology. The book discusses current RFID applications around the world, reveals key metrics for decision making as well as how to develop new metrics unique to RFID, demonstrates a war game for exploring RFID, and presents statistical methods for analyzing the data collected from the war games or gathered during implementation.

CRC Press

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eBook: 978-0-429-07515-5

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Supply Chain Management for Engineers



Samuel H. Huang University of Cincinnati, Ohio, USA

The book focuses on helping students develop strong analytical skills and the ability to solve real-world problems through analysis and synthesis. It also stresses the importance of integrating engineering optimization techniques with business strategic thinking. It starts with the description of different types of supply chains and the strategy for designing an appropriate supply chain based on product life cycle analysis. It then focuses on quantitative analysis techniques including demand forecasting, aggregate planning, inventory management, and distribution network design. It also covers supplier selection.

CRC Press

June 2013 : 240pp

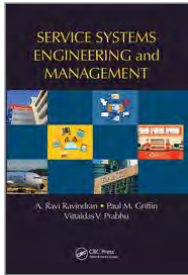
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Hb: 978-1-138-45563-4 £195

eBook: 978-0-429-09937-3

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Service Systems Engineering and Management



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This new textbook will provide state-of-the-art models, concepts and solution methods important in the design, control, operation, and management of service systems. It will cover supply chain management, warehouse & distribution, financial engineering, revenue management in airlines, retail engineering, health systems, and financial services, etc... The textbook is for the engineering market, emphasizing the application of operations research models to optimally design and manage service systems. Currently, no such textbook exists in the market.

CRC Press

March 2021 : 618pp

Pb: 978-0-367-78132-3 £47.99

Hb: 978-1-498-72306-0 £120

eBook: 978-1-351-05418-8

* For full contents and more information, visit www.routledge.com/9780367781323

3RD EDITION

The Art of Systems Architecting



Mark W. Maier

The third edition of this bestselling text explains how to create a system from scratch, presenting invention/design rules together with clear explanations of how to use them. The author supplies practical guidelines for avoiding common systematic failures while implementing new mandates. He uses a heuristics-based approach that provides an organized attack on very ill-structured engineering problems. Examining architecture as more than a set of diagrams and documents, but as a set of decisions that either drive a system to success or doom it to failure, the book provides methods for integrating business strategy with technical architectural decision making.

CRC Press

June 2021 : 466pp

Pb: 978-1-032-09952-1 £48.99

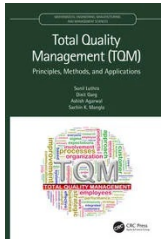
Hb: 978-1-420-07913-5 £120

eBook: 978-0-429-19614-0

* For full contents and more information, visit www.routledge.com/9781032099521

Total Quality Management (TQM)

Principles, Methods, and Applications



Sunil Luthra State Institute of Engineering and Technology, Nilokheri
Dixit Garg National Institute of Technology, Kurukshetra, India
Ashish Agarwal SOET,
Sachin K. Mangla Plymouth University, Plymouth

Series: Mathematical Engineering, Manufacturing, and Management Sciences

Total Quality Management (TQM) integrates all phases and ensures a defect free quality product. This book provides the understanding of all aspects of TQM and the implementation. This textbook covers all aspects of TQM, discusses quality systems in detail, highlights the importance of the needs of the customer, and presents the concept of Total Productive Maintenance (TPM). Written as a textbook for students of engineering and management, but also explains all quality systems which will be helpful to all organisations in choosing the correct quality system and helpful to managers in decisions making while analyzing any process.

CRC Press

October 2024 : 222pp

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