

1 Introducing Logistics John Wiley Sons

Global Logistics and Supply Chain Management 2020-12-07 John Mangan Global Logistics and Supply Chain Management is a comprehensive, fully up-to-date introduction to the subject. Addressing both practical and strategic perspectives, this revised and updated fourth edition offers readers a balanced and integrated presentation of Logistics and Supply Chain Management (LSCM) concepts, practices, technologies, and applications. Contributions from experts in specific areas of LSCM provide readers with real-world insights on supply chain relationships, transport security, inventory management, supply chain designs, the challenges inherent to globalization and international trade, and more. The text examines how information, materials, products, and services flow across the public and private sectors and around the world. Detailed case studies highlight LSCM practices and strategies in a wide range of contexts, from humanitarian aid and pharmaceutical supply chains to semi-automated distribution centers and port and air cargo logistics. Examples of LSCM in global corporations such as Dell Computer and Jaguar Land Rover highlight the role of new and emerging technologies. This edition features new and expanded discussion of contemporary topics including sustainability, supply chain vulnerability, and reverse logistics, and places greater emphasis on operations management.

Supply Chain Management For Dummies 2017-11-29 Daniel Stanton Everyone can impact the supply chain Supply Chain Management For Dummies helps you connect the dots between things like purchasing, logistics, and operations to see how the big picture is affected by seemingly isolated inefficiencies. Your business is a system, made of many moving parts that must synchronize to most efficiently meet the needs of your customers—and your shareholders. Interruptions in one area ripple throughout the entire operation, disrupting the careful coordination that makes businesses successful; that's where supply chain management (SCM) comes in. SCM means different things to different people, and many different models exist to meet the needs of different industries. This book focuses on the broadly-applicable Supply Chain Operations Reference (SCOR) Model: Plan, Source, Make, Deliver, Return, and Enable, to describe the basic techniques and key concepts that keep businesses running smoothly. Whether you're in sales, HR, or product development, the decisions you make every day can impact the supply chain. This book shows you how to factor broader impact into your decision making process based on your place in the system. Improve processes by determining your metrics Choose the right software and implement appropriate automation Evaluate and mitigate risks at all steps in the supply chain Help your business function as a system to more effectively meet customer needs We tend to think of the supply chain as suppliers, logistics, and warehousing—but it's so much more than that. Every single person in your organization, from the mailroom to the C-suite, can work to enhance or hinder the flow. Supply Chain Management For Dummies shows you what you need to know to make sure your impact leads to positive outcomes.

Transport Infrastructure and Systems 2017-03-16 Gianluca Dell'Acqua Transport Infrastructure Asset management in transport infrastructure, financial viability of transport engineering projects/ Life cycle Cost Analysis, Life-Cycle Assessment and Sustainability Assessment of transport infrastructure/ Infrastructures financing and pricing with equity appraisal, operation optimization and energy management/ Low-Volume roads: planning, maintenance, operations, environmental and social issues/ Public-Private Partnership (PPP) experience in transport infrastructure in different countries and economic conditions/ Airport Pavement Management Systems, runway design and maintenance/ Port maintenance and development issues, technology relating to cargo handling, landside access, cruise operations/ Infrastructure Building Information Modelling (I-BIM) / Pavement design and innovative bituminous materials/ Recycling and re-use in road pavements,

environmentally sustainable technologies/ Stone pavements, ancient roads and historic railways/ Cementitious stabilization of materials used in the rehabilitation of transportation infrastructure. Transport Systems Sustainable transport and the environment protection including green vehicles/ Urban transport, land use development, spatial and transport planning/ Bicycling, bike, bike-sharing systems, cycling mobility/ Human factor in transport systems/ Intelligent Mobility: emerging technologies to enable the smarter movement of people and goods/Airport landside: access roads, parking facilities, terminal facilities, aircraft apron and the adjacent taxiway/ Transportation policy, planning and design, modelling and decision making/ Transport economics, finance and pricing issues, optimization problems, equity appraisal/ Road safety impact assessments, road safety audits, the management of road network safety and safety inspections/ Tunnels and underground structures: preventing incidents-accidents mitigating their effects for both people and goods/ Traffic flow characteristics, traffic control devices, work zone traffic control, highway capacity and quality of service/ Track-vehicle interactions in railway systems, capacity analysis of railway networks/ Risk assessment and safety in air and railway transport, reliability aspects/ Maritime transport and inland waterways transport research/ Intermodal freight transport: terminals and logistics.

Computer Vision and Imaging in Intelligent Transportation Systems 2017-03-20 Robert P. Loce Acts as single source reference providing readers with an overview of how computer vision can contribute to the different applications in the field of road transportation This book presents a survey of computer vision techniques related to three key broad problems in the roadway transportation domain: safety, efficiency, and law enforcement. The individual chapters present significant applications within those problem domains, each presented in a tutorial manner, describing the motivation for and benefits of the application, and a description of the state of the art. Key features: Surveys the applications of computer vision techniques to road transportation system for the purposes of improving safety and efficiency and to assist law enforcement. Offers a timely discussion as computer vision is reaching a point of being useful in the field of transportation systems. Available as an enhanced eBook with video demonstrations to further explain the concepts discussed in the book, as well as links to publically available software and data sets for testing and algorithm development. The book will benefit the many researchers, engineers and practitioners of computer vision, digital imaging, automotive and civil engineering working in intelligent transportation systems. Given the breadth of topics covered, the text will present the reader with new and yet unconceived possibilities for application within their communities.

The Digital Transformation of Logistics 2021-04-06 Mac Sullivan The digital transformation is in full swing and fundamentally changes how we live, work, and communicate with each other. From retail to finance, many industries see an inflow of new technologies, disruption through innovative platform business models, and employees struggling to cope with the significant shifts occurring. This Fourth Industrial Revolution is predicted to also transform Logistics and Supply Chain Management, with delivery systems becoming automated, smart networks created everywhere, and data being collected and analyzed universally. The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution provides a holistic overview of this vital subject clouded by buzz, hype, and misinformation. The book is divided into three themed-sections: Technologies such as self-driving cars or virtual reality are not only electrifying science fiction lovers anymore, but are also increasingly presented as cure-all remedies to supply chain challenges. In *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution*, the authors peel back the layers of excitement that have grown around new technologies such as the Internet of Things (IoT), 3D printing, Robotic Process Automation (RPA), Blockchain or Cloud computing, and show use cases that give a glimpse about the fascinating future we can expect. Platforms that allow businesses to centrally acquire and manage their logistics services disrupt an industry that has been relationship-based for centuries. The authors discuss smart contracts, which are one of the most exciting applications of Blockchain, Software as a Service (SaaS) offerings for freight procurement,

where numerous data sources can be integrated and decision-making processes automated, and marine terminal operating systems as an integral node for shipments. In *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution*, insights are shared into the cold chain industry where companies respond to increasing quality demands, and how European governments are innovatively responding to challenges of cross-border eCommerce. People are a vital element of the digital transformation and must be on board to drive change. *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution* explains how executives can create sustainable impact and how competencies can be managed in the digital age - especially for sales executives who require urgent upskilling to remain relevant. Best practices are shared for organizational culture change, drawing on studies among senior leaders from the US, Singapore, Thailand, and Australia, and for managing strategic alliances with logistics service providers to offset risks and create cross-functional, cross-company transparency. *The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution* provides realistic insights, a ready-to-use knowledge base, and a working vocabulary about current activities and emerging trends of the Logistics industry. Intended readers are supply chain professionals working for manufacturing, trading, and freight forwarding companies as well as students and all interested parties.

Transport Phenomena in Microfluidic Systems 2016-02-15 Pradipta Kumar Panigrahi Fully comprehensive introduction to the rapidly emerging area of micro systems technology *Transport Phenomena in Micro Systems* explores the fundamentals of the new technologies related to Micro-Electro-Mechanical Systems (MEMS). It deals with the behavior, precise control and manipulation of fluids that are geometrically constrained to a small, typically sub-millimeter, scale, such as nl, pl, fl, small size, low energy consumption, effects of the micro domain and heat transfer in the related devices. The author describes in detail and with extensive illustration micro fabrication, channel flow, transport laws, magnetophoresis, micro scale convection and micro sensors and activators, among others. This book spans multidisciplinary fields such as material science and mechanical engineering, engineering, physics, chemistry, microtechnology and biotechnology. Brings together in one collection recent and emerging developments in this fast-growing area of micro systems Covers multidisciplinary fields such as materials science, mechanical engineering, microtechnology and biotechnology, et al Comprehensive coverage of analytical models in microfluidics and MEMS technology Introduces micro fluidics applications include the development of inkjet printheads, micro-propulsion, and micro thermal technologies Presented in a very logical format Supplies readers with problems and solutions

Food Supply Chain Management 2008-04-15 Michael A. Bourlakis *Food Supply Chain Management* Edited by Michael A. Bourlakis and Paul W. H. Weightman The food supply chain is a series of links and inter-dependencies, from farms to food consumers' plates, embracing a wide range of disciplines. *Food Supply Chain Management* brings together the most important of these disciplines and aims to provide an understanding of the chain, to support those who manage parts of the chain and to enhance the development of research activities in the discipline. *Food Supply Chain Management* follows a 'farm to fork' structure. Each chapter starts with aims and an introduction and concludes with study questions that students in particular will find useful. Topics covered include the food consumer, perceived risk and product safety, procurement, livestock systems and crop production, food manufacture, retailing, wholesaling and catering. Special consideration is also given to supermarket supply networks, third party logistics, temperature controlled supply chains, organic foods and the U. S. food supply chain. A final chapter looks at the future for food supply chain management. Michael Bourlakis and Paul Weightman, the editors and contributors to this timely and fascinating book, have drawn together chapters from leading authorities in this important area, to provide a book that is an essential purchase for all those involved in the supply of food and its study. Those involved in the food supply chain within food companies and in academic

establishments, including agricultural scientists, food scientists, food technologists, and students studying these subjects, will find much of great use and interest within its covers. Libraries in all universities and research stations where these subjects are studied and taught should have several copies. Dr Bourlakis and Dr Weightman teach and research at the School of Agriculture, Food and Rural Development, University of Newcastle upon Tyne, U. K. Also available from Blackwell Publishing The Microbiological Risk Assessment of Food S. Forsythe 0 632 05952 4 HACCP S. Mortimore & C. Wallace 0 632 05648 7 Listeria, 2nd edition C. Bell & A. Kyriakides 1 405 10618 2 Salmonella C. Bell & A. Kyriakides 0 632 05519 7 International Journal of Food Science & Technology Published 10 times per year ISSN 0950-5423 Metal Contamination of Food, 3rd edition C. Reilly 0 632 05927 3

Artificial Intelligent Techniques for Wireless Communication and Networking 2022-02-24 R. Kanthavel ARTIFICIAL INTELLIGENT TECHNIQUES FOR WIRELESS COMMUNICATION AND NETWORKING The 20 chapters address AI principles and techniques used in wireless communication and networking and outline their benefit, function, and future role in the field. Wireless communication and networking based on AI concepts and techniques are explored in this book, specifically focusing on the current research in the field by highlighting empirical results along with theoretical concepts. The possibility of applying AI mechanisms towards security aspects in the communication domain is elaborated; also explored is the application side of integrated technologies that enhance AI-based innovations, insights, intelligent predictions, cost optimization, inventory management, identification processes, classification mechanisms, cooperative spectrum sensing techniques, ad-hoc network architecture, and protocol and simulation-based environments. Audience Researchers, industry IT engineers, and graduate students working on and implementing AI-based wireless sensor networks, 5G, IoT, deep learning, reinforcement learning, and robotics in WSN, and related technologies.

The Global Airline Industry 2015-07-06 Peter Belobaba Extensively revised and updated edition of the bestselling textbook, provides an overview of recent global airline industry evolution and future challenges Examines the perspectives of the many stakeholders in the global airline industry, including airlines, airports, air traffic services, governments, labor unions, in addition to passengers Describes how these different players have contributed to the evolution of competition in the global airline industry, and the implications for its future evolution Includes many facets of the airline industry not covered elsewhere in any single book, for example, safety and security, labor relations and environmental impacts of aviation Highlights recent developments such as changing airline business models, growth of emerging airlines, plans for modernizing air traffic management, and opportunities offered by new information technologies for ticket distribution Provides detailed data on airline performance and economics updated through 2013

Electrochemical Systems 2012-11-27 John Newman The new edition of the cornerstone text on electrochemistry Spans all the areas of electrochemistry, from the basics of thermodynamics and electrode kinetics to transport phenomena in electrolytes, metals, and semiconductors. Newly updated and expanded, the Third Edition covers important new treatments, ideas, and technologies while also increasing the book's accessibility for readers in related fields. Rigorous and complete presentation of the fundamental concepts In-depth examples applying the concepts to real-life design problems Homework problems ranging from the reinforcing to the highly thought-provoking Extensive bibliography giving both the historical development of the field and references for the practicing electrochemist.

Transport Phenomena 2010-12-01 Larry A. Glasgow Enables readers to apply transport phenomena principles to solve advanced problems in all areas of engineering and science This book helps readers elevate their understanding of, and their ability to apply, transport phenomena by

introducing a broad range of advanced topics as well as analytical and numerical solution techniques. Readers gain the ability to solve complex problems generally not addressed in undergraduate-level courses, including nonlinear, multidimensional transport, and transient molecular and convective transport scenarios. Avoiding rote memorization, the author emphasizes a dual approach to learning in which physical understanding and problem-solving capability are developed simultaneously. Moreover, the author builds both readers' interest and knowledge by: Demonstrating that transport phenomena are pervasive, affecting every aspect of life Offering historical perspectives to enhance readers' understanding of current theory and methods Providing numerous examples drawn from a broad range of fields in the physical and life sciences and engineering Contextualizing problems in scenarios so that their rationale and significance are clear This text generally avoids the use of commercial software for problem solutions, helping readers cultivate a deeper understanding of how solutions are developed. References throughout the text promote further study and encourage the student to contemplate additional topics in transport phenomena. Transport Phenomena is written for advanced undergraduates and graduate students in chemical and mechanical engineering. Upon mastering the principles and techniques presented in this text, all readers will be better able to critically evaluate a broad range of physical phenomena, processes, and systems across many disciplines.

Introduction to Logistics Systems Management 2013-02-06 Gianpaolo Ghiani Introduction to Logistics Systems Management is the fully revised and enhanced version of the 2004 prize-winning textbook Introduction to Logistics Systems Planning and Control, used in universities around the world. This textbook offers an introduction to the methodological aspects of logistics systems management and is based on the rich experience of the authors in teaching, research and industrial consulting. This new edition puts more emphasis on the organizational context in which logistics systems operate and also covers several new models and techniques that have been developed over the past decade. Each topic is illustrated by a numerical example so that the reader can check his or her understanding of each concept before moving on to the next one. At the end of each chapter, case studies taken from the scientific literature are presented to illustrate the use of quantitative methods for solving complex logistics decision problems. An exhaustive set of exercises is also featured at the end of each chapter. The book targets an academic as well as a practitioner audience, and is appropriate for advanced undergraduate and graduate courses in logistics and supply chain management, and should also serve as a methodological reference for practitioners in consulting as well as in industry.

Supply Chain Management 2001 John T. Mentzer This work presents a comprehensive model of supply chain management. Experienced executives from 20 companies clearly define supply chain management, identifying those factors that contribute to its effective implementation. They provide practical guidelines on how companies can manage supply chains, addressing the role of all the traditional business functions in supply chain management and suggest how the adoption of a supply chain management approach can affect business strategy and corporate performance.

Introduction to Global Logistics 2016-11-03 John Manners-Bell Introduction to Global Logistics offers a step-by-step guide to global logistics. Covering the breadth of logistics, this highly accessible text is illustrated by engaging case studies of market leaders. In this comprehensive second instalment of Global Logistics Strategies, John Manners-Bell provides an in-depth definition, description and exploration of the strategic principles and practices in transportation modes and supply chain verticals, including: freight forwarding, contract logistics, shipping, road freight, air cargo and express. The book also examines major sectors, including automotive, chemical, pharmaceutical, retail, consumer, and high tech. Introduction to Global Logistics offers a detailed examination of key topics, including: how the logistics industry has developed, how it is influenced by macro-economic factors and demand-side trends, what the risks are to the industry, and how it

will develop over the coming years. It examines important trends and developments that are shaping the industry, including 3D printing, megacities, and post-harvest food losses. Online resources available: Chapter-supporting lecturer slides.

Introduction to Logistics Systems Planning and Control 2004-01-26 Gianpaolo Ghiani Publisher Description

Essentials of Supply Chain Management 2018-02-22 Michael H. Hugos The bestselling guide to the field, updated with the latest innovations Essentials of Supply Chain Management is the definitive guide to the field, providing both broad coverage and necessary detail from a practical, real-world perspective. From clear explanation of fundamental concepts to insightful discussion of supply chain innovation, this book offers students and professionals a comprehensive introduction with immediately-applicable understanding. The fourth edition has been updated to reflect the current state of the field, with coverage of the latest technologies and new case studies that illustrate critical concepts in action. Organized for easy navigation and ease-of-use, this invaluable guide also serves as a quick reference for managers in the field seeking tips and techniques for maximizing efficiency and turning the supply chain into a source of competitive advantage. The supply chain underpins the entire structure of manufacturing and retailing. Well-run, it can help a company become a global behemoth—or, if poorly-managed, it can sink a company before the product ever sees the light of day. The supply chain involves many moving parts, constantly-changing variables, and a network of other business that may have different priorities and interests—keeping it all running smoothly is a complex, but immensely powerful skill. This book takes you inside the supply chain to show you what you need to know. Understand the fundamental concepts behind supply chain management Learn how supply chains work, and how to measure their performance Explore the ways in which innovation is improving supply chains around the world Examine the supply chain as a source of competitive advantage Whether you're at the front or the back of your supply chain, your business is affected by every other company and event in the chain. Deep understanding and a host of practical skills are required to accurately predict, react to, and manage the ever-changing stream of events that could potentially disrupt the flow. Essentials of Supply Chain Management prepares you to take on the challenge and succeed.

Introduction to Maintenance Engineering 2016-04-04 Mohamed Ben-Daya This introductory textbook links theory with practice using real illustrative cases involving products, plants and infrastructures and exposes the student to the evolutionary trends in maintenance. Provides an interdisciplinary approach which links, engineering, science, technology, mathematical modelling, data collection and analysis, economics and management Blends theory with practice illustrated through examples relating to products, plants and infrastructures Focuses on concepts, tools and techniques Identifies the special management requirements of various engineered objects (products, plants, and infrastructures)

Comprehensive Logistics 2012-01-10 Timm Gudehus Modern logistics comprises operative logistics, analytical logistics and management of logistic networks. Central task of operative logistics is the efficient supply of required goods at the right place within the right time. Tasks of analytical logistics are designing optimal networks and systems, developing strategies for planning, scheduling and operation, and organizing efficient order and performance processes. Logistic management plans, implements and operates logistic networks and schedules orders, stocks and resources. This reference-book offers a unique survey of modern logistics. It contains proven strategies, rules and tools for the solution of a multitude of logistic problems. The analytically derived algorithms and formulas can be used for the computer-based planning of logistic systems and for the dynamic scheduling of orders and resources in supply networks. They enable significant improvements of performance, quality and costs. Their application is demonstrated by several examples from

industry, trade and service providers. Apart from corrections and modifications the second edition contains a new chapter on maritime logistics. It demonstrates how the methods of this book can be used to solve complex logistic problems of practical relevance for economy, society and environment. The book is written for professionals, scientists, teachers and graduate students. An extensive index makes it a dictionary of modern logistics.

Transport Properties of Ions in Gases 1988-08-09 Edward A. Mason Presents thorough coverage of the transport properties of ions in gases. Starts from first principles, making this book useful to those new to the field as well as to experts. Describes the motions of ions in gases in electric fields, methods for measuring mobilities and diffusion coefficients, and pitfalls in measuring these quantities. Provides a detailed development of the theory of transport processes in the context of the kinetic theory of gases. Includes relevant experimental techniques and an index to experimental data.

City Logistics 3 2018-05-24 Eiichi Taniguchi This volume of three books presents recent advances in modelling, planning and evaluating city logistics for sustainable and liveable cities based on the application of ICT (Information and Communication Technology) and ITS (Intelligent Transport Systems). It highlights modelling the behaviour of stakeholders who are involved in city logistics as well as planning and managing policy measures of city logistics including cooperative freight transport systems in public-private partnerships. Case studies of implementing and evaluating city logistics measures in terms of economic, social and environmental benefits from major cities around the world are also given.

Sustainable Operations and Supply Chain Management 2017-03-20 Valeria Belvedere SUSTAINABLE OPERATIONS AND SUPPLY CHAIN MANAGEMENT SUSTAINABLE OPERATIONS AND SUPPLY CHAIN MANAGEMENT Sustainable Operations and Supply Chain Management addresses the most relevant topics of operations and supply chain management from the perspective of sustainability. The main focus is to provide a step-by-step guide for managerial decisions made along the product life cycle, following a path made up of the following steps: product design, sourcing, manufacturing, packaging and physical distribution, reverse logistics and recovery. Guidance is provided on understanding traditional operations and supply chain management approaches, tools and techniques such as production planning, stock management, quality management and performance measurement, which can be adapted to achieve economic, environmental and social sustainability. Key features: Repositions the main operations and supply chain management decisions developed in the perspective of the Life Cycle Analysis (Cradle-to-Cradle approach) and the Triple Bottom Line approach (economic, environmental and social sustainability) Covers sustainability and future trends, sustainable operations as a competitive factor as well as performance measurement and control Explores five main areas of operations and supply chain management; design for environment, procurement, manufacturing, packaging and distribution and reverse supply chain Provides a case study within each chapter to further the reader's understanding along with numerous examples and real-world problems The book will be valuable for students at undergraduate and graduate levels in management and engineering schools, as well as for practitioners working in operations and supply chain management functions.

Applied Logistic Regression, Second Edition: Book and Solutions Manual Set 2001-11-13 David W. Hosmer, Jr. From the reviews of the First Edition. "An interesting, useful, and well-written book on logistic regression models. . . Hosmer and Lemeshow have used very little mathematics, have presented difficult concepts heuristically and through illustrative examples, and have included references.

An Introduction to Categorical Data Analysis 2018-10-11 Alan Agresti A valuable new edition of

a standard reference The use of statistical methods for categorical data has increased dramatically, particularly for applications in the biomedical and social sciences. An Introduction to Categorical Data Analysis, Third Edition summarizes these methods and shows readers how to use them using software. Readers will find a unified generalized linear models approach that connects logistic regression and loglinear models for discrete data with normal regression for continuous data. Adding to the value in the new edition is: • Illustrations of the use of R software to perform all the analyses in the book • A new chapter on alternative methods for categorical data, including smoothing and regularization methods (such as the lasso), classification methods such as linear discriminant analysis and classification trees, and cluster analysis • New sections in many chapters introducing the Bayesian approach for the methods of that chapter • More than 70 analyses of data sets to illustrate application of the methods, and about 200 exercises, many containing other data sets • An appendix showing how to use SAS, Stata, and SPSS, and an appendix with short solutions to most odd-numbered exercises Written in an applied, nontechnical style, this book illustrates the methods using a wide variety of real data, including medical clinical trials, environmental questions, drug use by teenagers, horseshoe crab mating, basketball shooting, correlates of happiness, and much more. An Introduction to Categorical Data Analysis, Third Edition is an invaluable tool for statisticians and biostatisticians as well as methodologists in the social and behavioral sciences, medicine and public health, marketing, education, and the biological and agricultural sciences.

Environmental Transport Processes 2012-03-20 Bruce E. Logan A unique approach to the challenges of complex environmental systems Environmental Transport Processes, Second Edition provides much-needed guidance on mass transfer principles in environmental engineering. It focuses on working with uncontrolled conditions involving biological and physical systems, offering examples from diverse fields, including mass transport, kinetics, wastewater treatment, and unit processes. This new edition is fully revised and updated, incorporating modern approaches and practice problems at the end of chapters, making the Second Edition more concise, accessible, and easy to use. The book discusses the fundamentals of transport processes occurring in natural environments, with special emphasis on working at the biological physical interface. It considers transport and kinetics in terms of systems that involve microorganisms, along with in-depth coverage of particles, size spectra, and calculations for particles that can be considered either spheres or fractals. The book's treatment of particles as fractals is especially unique and the Second Edition includes a new section on exoelectrogenic biofilms. It also addresses dispersion in natural and engineered systems unlike any other book on the subject. Readers will learn to tackle with confidence complex environmental systems and make transport calculations in heterogeneous environments with mixtures of chemicals.

Partial Differential Equations 2007-12-21 Walter A. Strauss 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.

Sustainable Supply Chain Management 2013-05-06 Joëlle Morana It is commonly recognized

that logistics has become a major strategic issue for all companies, whether they are part of the primary, secondary or tertiary sector. Faced with the external pressures of globalization and competition, logistics optimizes processes and reduces production and delivery cycles. The use of Sustainable Supply Chain Management (SuSCM) is now increasingly at the center of thought, due to the numerous factors favoring its implementation: requests from various stakeholders, governmental pressures (decrees, laws, regulations, etc.), environmental pressures (pollution, disappearance of fuel fossils, etc.) and societal pressures (reputation/image, protection, etc.). However, there are still obstacles to the implementation of SuSCM, including significant costs, the complexity of coordination and the lack of communication within the whole supply chain. Nevertheless, it should nowadays be included by any organization in its decision towards a strategic approach towards sustainability. This book presents each economic, environmental and societal aspect of SuSCM. By considering each of these dimensions separately, the primary objective is to facilitate the implementation of the elements that make it up. Readers are also provided with several "strategic interpretive lenses" to be able to perform audits and diagnostics of each component. Contents: 1. The Economic Aspect of Sustainable Supply Chain Management. 2. The Environmental Aspect of Sustainable Supply Chain Management. 3. The Social/Societal Aspect of Sustainable Supply Chain Management. 4. Sustainable Supply Chain Management Balanced Scorecard. About the Authors Joëlle Morana is Lecturer in management science, attached to the Laboratoire d'Économie des Transports (Transport Economy Laboratory) at University Lumière Lyon II in France. Her fields of research concern economic, environmental and societal logistics.

Fuel Cell Fundamentals 2016-05-02 Ryan O'Hayre A complete, up-to-date, introductory guide to fuel cell technology and application Fuel Cell Fundamentals provides a thorough introduction to the principles and practicalities behind fuel cell technology. Beginning with the underlying concepts, the discussion explores fuel cell thermodynamics, kinetics, transport, and modeling before moving into the application side with guidance on system types and design, performance, costs, and environmental impact. This new third edition has been updated with the latest technological advances and relevant calculations, and enhanced chapters on advanced fuel cell design and electrochemical and hydrogen energy systems. Worked problems, illustrations, and application examples throughout lend a real-world perspective, and end-of chapter review questions and mathematical problems reinforce the material learned. Fuel cells produce more electricity than batteries or combustion engines, with far fewer emissions. This book is the essential introduction to the technology that makes this possible, and the physical processes behind this cost-saving and environmentally friendly energy source. Understand the basic principles of fuel cell physics Compare the applications, performance, and costs of different systems Master the calculations associated with the latest fuel cell technology Learn the considerations involved in system selection and design As more and more nations turn to fuel cell commercialization amidst advancing technology and dropping deployment costs, global stationary fuel cell revenue is expected to grow from \$1.4 billion to \$40.0 billion by 2022. The sector is forecasted to explode, and there will be a tremendous demand for high-level qualified workers with advanced skills and knowledge of fuel cell technology. Fuel Cell Fundamentals is the essential first step toward joining the new energy revolution.

A Basic Introduction to Pollutant Fate and Transport 2006-02-17 Frank M. Dunnivant A uniquely accessible text on environmental modeling designed for both students and industry personnel Pollutant fate and modeling are becoming increasingly important in both regulatory and scientific areas. However, the complexity of the software and models often act as an inhibitor to the advancement of water quality science. A Basic Introduction to Pollutant Fate and Transport fills the need for a basic instructional tool for students and environmental professionals who lack the rigorous mathematical background necessary to derive the governing fate and transport equations. Taking a refreshingly simple approach to the subject that requires only a basic knowledge of algebra and first-year college chemistry, the book presents and integrates all of the aspects of fate and

transport, including chemistry, modeling, risk assessment, and relevant environmental legislation; approaching each topic first conceptually before introducing the math necessary to model it. The first half of the book is dedicated to the chemistry and physics behind the fate and transport models, while the second half teaches and reinforces the logical concepts underlying fate and transport modeling. This better prepares students for support jobs in the environmental arena surrounding chemical industry and Superfund sites. Contributing to the book's ease of use are: An extremely user-friendly software program, Fate, which uses basic models to predict the fate and transport of pollutants in lakes, rivers, groundwater, and atmospheric systems The use of "canned" models to evaluate the importance of model parameters and sensitivity analysis A wealth of easy-to-understand examples and problems A chapter on environmental legislation in the United States and Europe A set of lab exercises, as well as a downloadable set of teaching aids A much-needed basic text for contemporary hydrology or environmental chemistry courses and support courses for the environmental industry, this is a valuable desk reference for educators and industry professionals.

Critically evaluate the development of Supply Chain Management over the last 30 years from its roots in physical distribution into a strategic boardroom level business issue

2012-11-21 Christian Bernhardt Essay from the year 2012 in the subject Business economics - Supply, Production, Logistics, grade: 1, Heriot-Watt University Edinburgh, language: English, abstract: 'The real challenge is to improve the capabilities across supply chains significantly in order to drive out cost and realize revenue benefits - fast' (Gattorna 2003, p.4). This statement both demonstrates the importance for enterprises and emphasizes the complexity of the supply chain requirements these days. In times of strong competition almost everywhere it is especially important to meet customer needs and thus 'achieving high levels of service' (Taylor 1997, p.3). But where does Supply Chain Management (SCM) have its roots and what stands behind it? The purpose of this essay is to critically evaluate the development of SCM. It will both include an explanation of the differences between logistics and SCM and its reasons as well as an explanation why supply chain managers are now part of the senior management group. Therefore, the history of physical distribution, logistics and SCM will be mentioned, these three central terms will be defined precisely and four academic strategic approaches will be introduced briefly.

City Logistics 1 2018-05-24 Eiichi Taniguchi This volume of three books presents recent advances in modelling, planning and evaluating city logistics for sustainable and liveable cities based on the application of ICT (Information and Communication Technology) and ITS (Intelligent Transport Systems). It highlights modelling the behaviour of stakeholders who are involved in city logistics as well as planning and managing policy measures of city logistics including cooperative freight transport systems in public-private partnerships. Case studies of implementing and evaluating city logistics measures in terms of economic, social and environmental benefits from major cities around the world are also given.

A Streetcar to Subduction and Other Plate Tectonic Trips by Public Transport in San Francisco 1984 Clyde Wahrhaftig

Qualitative Research Methods 2012-11-05 Sarah J. Tracy Qualitative Research Methods is a comprehensive, all-inclusive resource for the theory and practice of qualitative/ethnographic research methodology. Serves as a "how-to" guide for qualitative/ethnographic research, detailing how to design a project, conduct interviews and focus groups, interpret and analyze data, and represent it in a compelling manner Demonstrates how qualitative data can be systematically utilized to address pressing personal, organizational, and social problems Written in an engaging style, with in-depth examples from the author's own practice Comprehensive companion website includes sample syllabi, lesson plans, a list of helpful website links, test bank and exam review materials, and exercises and worksheets, available upon publication at

Introduction to Logistics Systems Planning and Control 2004-03-05 Gianpaolo Ghiani Logistic systems constitute one of the cornerstones in the design and control of production systems and the modelling of supply chains. They are key to a number of industries, and courses teaching logistics systems planning and control are becoming more widespread. Introduction to Logistics Systems Planning and Control is the first book to present the quantitative methods necessary for logistics systems management at a level suitable for students of engineering, computer science and management science. It features introductory material on business logistics and covers sales forecasting, inventory management, warehouse design and management, and transport planning and control. Presents a balanced treatment of quantitative methods for logistics systems planning, organization and control. Each topic is illustrated with real examples. Features a number of case studies that show how the methods can be applied to complex logistics problems. Each chapter features an annotated bibliography of key references. Assumes only a basic knowledge of operations research. Supported by a Website featuring exercises and teaching material. Introduction to Logistics Systems Planning and Control provides an accessible self-contained introduction to the subject for researchers, practitioners, and students of logistics and supply chain management, in both academia and industry. The book has been developed from courses taught to engineering, computer science and management science undergraduate and graduate students.

Multimodal Transport Systems 2013-12-11 Slim Hammadi The use and management of multimodal transport systems, including car-pooling and goods transportation, have become extremely complex, due to their large size (sometimes several thousand variables), the nature of their dynamic relationships as well as the many constraints to which they are subjected. The managers of these systems must ensure that the system works as efficiently as possible by managing the various causes of malfunction of the transport system (vehicle breakdowns, road obstructions, accidents, etc.). The detection and resolution of conflicts, which are particularly complex and must be dealt with in real time, are currently processed manually by operators. However, the experience and abilities of these operators are no longer sufficient when faced with the complexity of the problems to be solved. It is thus necessary to provide them with an interactive tool to help with the management of disturbances, enabling them to identify the different disturbances, to characterize and prioritize these disturbances, to process them by taking into account their specifics and to evaluate the impact of the decisions in real time. Each chapter of this book can be broken down into an approach for solving a transport problem in 3 stages, i.e. modeling the problem, creating optimization algorithms and validating the solutions. The management of a transport system calls for knowledge of a variety of theories (problem modeling tools, multi-objective problem classification, optimization algorithms, etc.). The different constraints increase its complexity drastically and thus require a model that represents as far as possible all the components of a problem in order to better identify it and propose corresponding solutions. These solutions are then evaluated according to the criteria of the transport providers as well as those of the city transport authorities. This book consists of a state of the art on innovative transport systems as well as the possibility of coordinating with the current public transport system and the authors clearly illustrate this coordination within the framework of an intelligent transport system. Contents 1. Dynamic Car-pooling, Slim Hammadi and Nawel Zangar. 2. Simulation of Urban Transport Systems, Christian Tahon, Thérèse Bonte and Alain Gibaud. 3. Real-time Fleet Management: Typology and Methods, Frédéric Semet and Gilles Goncalves. 4. Solving the Problem of Dynamic Routes by Particle Swarm, Mostefa Redouane Khouahjia, Laetitia Jourdan and El Ghazali Talbi. 5. Optimization of Traffic at a Railway Junction: Scheduling Approaches Based on Timed Petri Nets, Thomas Bourdeaud'huy and Benoît Trouillet. About the Authors Slim Hammadi is Full Professor at the Ecole Centrale de Lille in France, and Director of the LAGIS Team on Optimization of Logistic systems. He is an IEEE Senior Member and specializes in distributed optimization, multi-agent systems, supply chain management and metaheuristics. Mekki

Ksouri is Professor and Head of the Systems Analysis, Conception and Control Laboratory at Tunis El Manar University, National Engineering School of Tunis (ENIT) in Tunisia. He is an IEEE Senior Member and specializes in control systems, nonlinear systems, adaptive control and optimization. The multimodal transport network customers need to be oriented during their travels. A multimodal information system (MIS) can provide customers with a travel support tool, allowing them to express their demands and providing them with the appropriate responses in order to improve their travel conditions. This book develops methodologies in order to realize a MIS tool capable of ensuring the availability of permanent multimodal information for customers before and while traveling, considering passengers mobility.

Modelling Transport 2011-05-03 Juan de Dios Ortúzar Already the market leader in the field, Modelling Transport has become still more indispensable following a thorough and detailed update. Enhancements include two entirely new chapters on modelling for private sector projects and on activity-based modelling; a new section on dynamic assignment and micro-simulation; and sizeable updates to sections on disaggregate modelling and stated preference design and analysis. It also tackles topical issues such as valuation of externalities and the role of GPS in travel time surveys. Providing unrivalled depth and breadth of coverage, each topic is approached as a modelling exercise with discussion of the roles of theory, data, model specification, estimation, validation and application. The authors present the state of the art and its practical application in a pedagogic manner, easily understandable to both students and practitioners. Follows on from the highly successful third edition universally acknowledged as the leading text on transport modelling techniques and applications Includes two new chapters on modelling for private sector projects and activity based modeling, and numerous updates to existing chapters Incorporates treatment of recent issues and concerns like risk analysis and the dynamic interaction between land use and transport Provides comprehensive and rigorous information and guidance, enabling readers to make practical use of every available technique Relates the topics to new external factors and technologies such as global warming, valuation of externalities and global positioning systems (GPS).

Applied Logistic Regression 2004-10-28 David W. Hosmer, Jr. From the reviews of the First Edition. "An interesting, useful, and well-written book on logistic regression models . . . Hosmer and Lemeshow have used very little mathematics, have presented difficult concepts heuristically and through illustrative examples, and have included references." —Choice "Well written, clearly organized, and comprehensive . . . the authors carefully walk the reader through the estimation of interpretation of coefficients from a wide variety of logistic regression models . . . their careful explication of the quantitative re-expression of coefficients from these various models is excellent." —Contemporary Sociology "An extremely well-written book that will certainly prove an invaluable acquisition to the practicing statistician who finds other literature on analysis of discrete data hard to follow or heavily theoretical." —The Statistician In this revised and updated edition of their popular book, David Hosmer and Stanley Lemeshow continue to provide an amazingly accessible introduction to the logistic regression model while incorporating advances of the last decade, including a variety of software packages for the analysis of data sets. Hosmer and Lemeshow extend the discussion from biostatistics and epidemiology to cutting-edge applications in data mining and machine learning, guiding readers step-by-step through the use of modeling techniques for dichotomous data in diverse fields. Ample new topics and expanded discussions of existing material are accompanied by a wealth of real-world examples-with extensive data sets available over the Internet.

Charge Transport in Disordered Solids with Applications in Electronics 2006-08-14 Sergei Baranovski The field of charge conduction in disordered materials is a rapidly evolving area owing to current and potential applications of these materials in various electronic devices This text aims to

cover conduction in disordered solids from fundamental physical principles and theories, through practical material development with an emphasis on applications in all areas of electronic materials. International group of contributors Presents basic physical concepts developed in this field in recent years in a uniform manner Brings up-to-date, in a one-stop source, a key evolving area in the field of electronic materials

Introduction to Distribution Logistics 2007-07-27 Paolo Brandimarte unique introduction to distribution logistics that focuses on both quantitative modeling and practical business issues Introduction to Distribution Logistics presents a complete and balanced treatment of distribution logistics by covering both applications and the required theoretical background, therefore extending its reach to practitioners and students in a range of disciplines such as management, engineering, mathematics, and statistics. The authors emphasize the variety and complexity of issues and sub-problems surrounding distribution logistics as well as the limitations and scope of applicability of the proposed quantitative tools. Throughout the book, readers are provided with the quantitative approaches needed to handle real-life management problems, and areas of study include: Supply chain management Network design and transportation Demand forecasting Inventory control in single- and multi-echelon systems Incentives in the supply chain Vehicle routing Complete with extensive appendices on probability and statistics as well as mathematical programming, Introduction to Distribution Logistics is a valuable text for distribution logistics courses at both the advanced undergraduate and beginning graduate levels in a variety of disciplines, and prior knowledge of production planning is not assumed. The book also serves as a useful reference for practitioners in the fields of applied mathematics and statistics, manufacturing engineering, business management, and operations research. The book's related Web site includes additional sections and numerical illustrations.

Transportation Decision Making 2011-09-09 Kumares C. Sinha This pioneering text provides a holistic approach to decisionmaking in transportation project development and programming, which can help transportation professionals to optimize their investment choices. The authors present a proven set of methodologies for evaluating transportation projects that ensures that all costs and impacts are taken into consideration. The text's logical organization gets readers started with a solid foundation in basic principles and then progressively builds on that foundation. Topics covered include: Developing performance measures for evaluation, estimating travel demand, and costing transportation projects Performing an economic efficiency evaluation that accounts for such factors as travel time, safety, and vehicle operating costs Evaluating a project's impact on economic development and land use as well as its impact on society and culture Assessing a project's environmental impact, including air quality, noise, ecology, water resources, and aesthetics Evaluating alternative projects on the basis of multiple performance criteria Programming transportation investments so that resources can be optimally allocated to meet facility-specific and system-wide goals Each chapter begins with basic definitions and concepts followed by a methodology for impact assessment. Relevant legislation is discussed and available software for performing evaluations is presented. At the end of each chapter, readers are provided resources for detailed investigation of particular topics. These include Internet sites and publications of international and domestic agencies and research institutions. The authors also provide a companion Web site that offers updates, data for analysis, and case histories of project evaluation and decisionmaking. Given that billions of dollars are spent each year on transportation systems in the United States alone, and that there is a need for thorough and rational evaluation and decision making for cost-effective system preservation and improvement, this text should be on the desks of all transportation planners, engineers, and educators. With exercises in every chapter, this text is an ideal coursebook for the subject of transportation systems analysis and evaluation.

Supply Chain Management 2011-09-12 Dr. Md. Mamun Habib Supply Chain Management (SCM) has

been widely researched in numerous application domains during the last decade. Despite the popularity of SCM research and applications, considerable confusion remains as to its meaning. There are several attempts made by researchers and practitioners to appropriately define SCM. Amidst fierce competition in all industries, SCM has gradually been embraced as a proven managerial approach to achieving sustainable profits and growth. This book "Supply Chain Management - Applications and Simulations" is comprised of twelve chapters and has been divided into four sections. Section I contains the introductory chapter that represents theory and evolution of Supply Chain Management. This chapter highlights chronological prospective of SCM in terms of time frame in different areas of manufacturing and service industries. Section II comprised five chapters those are related to strategic and tactical issues in SCM. Section III encompasses four chapters that are relevant to project and technology issues in Supply Chain. Section IV consists of two chapters which are pertinent to risk managements in supply chain.

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