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KEY=CONCEPTS - NATHANIEL NADIA

Electrical Engineering: Concepts and Applications International Edition
Pearson Higher Ed For non-electrical engineering majors taking the introduction to electrical engineering course. **Electrical Engineering: Concepts and Applications** is the result of a multi-disciplinary effort at Michigan Technological University to create a new curriculum that is attractive, motivational, and relevant to students by creating many application-based problems; and provide the optimal level of both range and depth of coverage of EE topics in a curriculum package. **Thermal Design Heat Sinks, Thermoelectrics, Heat Pipes, Compact Heat Exchangers, and Solar Cells** *John Wiley & Sons* The proposed is written as a senior undergraduate or the first-year graduate textbook, covering modern thermal devices such as heat sinks, thermoelectric generators and coolers, heat pipes, and heat exchangers as design components in larger systems. These devices are becoming increasingly important and fundamental in thermal design across such diverse areas as microelectronic cooling, green or thermal energy conversion, and thermal control and management in space, etc. However, there is no textbook available covering this range of topics. The proposed book may be used as a capstone design course after the fundamental courses such as thermodynamics, fluid mechanics, and heat transfer. The underlying concepts in this book cover the, 1) understanding of the physical mechanisms of the thermal devices with the essential formulas and detailed derivations, and 2) designing the thermal devices in conjunction with mathematical modeling, graphical optimization, and occasionally computational-fluid-dynamic (CFD) simulation. Important design examples are developed using the commercial software, MathCAD, which allows the students to easily reach the graphical solutions even with highly detailed processes. In other words, the design concept is embodied

through the example problems. The graphical presentation generally provides designers or students with the rich and flexible solutions toward achieving the optimal design. A solutions manual will be provided. **Internal Combustion Engines Applied Thermosciences** *John Wiley & Sons* Since the publication of the Second Edition in 2001, there have been considerable advances and developments in the field of internal combustion engines. These include the increased importance of biofuels, new internal combustion processes, more stringent emissions requirements and characterization, and more detailed engine performance modeling, instrumentation, and control. There have also been changes in the instructional methodologies used in the applied thermal sciences that require inclusion in a new edition. These methodologies suggest that an increased focus on applications, examples, problem-based learning, and computation will have a positive effect on learning of the material, both at the novice student, and practicing engineer level. This Third Edition mirrors its predecessor with additional tables, illustrations, photographs, examples, and problems/solutions. All of the software is 'open source', so that readers can see how the computations are performed. In addition to additional java applets, there is companion Matlab code, which has become a default computational tool in most mechanical engineering programs.

ENGINEERING GRAPHICS WITH AUTOCAD *PHI Learning Pvt. Ltd.* Designed as a text for the undergraduate students of all branches of engineering, this compendium gives an opportunity to learn and apply the popular drafting software AutoCAD in designing projects. The textbook is organized in three comprehensive parts. Part I (AutoCAD) deals with the basic commands of AutoCAD, a popular drafting software used by engineers and architects. Part II (Projection Techniques) contains various projection techniques used in engineering for technical drawings. These techniques have been explained with a number of line diagrams to make them simple to the students. Part III (Descriptive Geometry), mainly deals with 3-D objects that require imagination. The accompanying CD contains the animations using creative multimedia and PowerPoint presentations for all chapters. In a nutshell, this textbook will help students maintain their cutting edge in the professional job market. **KEY FEATURES :** Explains fundamentals of imagination skill in generic and basic forms to crystallize concepts. Includes chapters on aspects of technical drawing and AutoCAD as a tool. Treats problems in the third angle as well as first angle methods of projection in line with the revised code of Indian Standard Code of Practice for General Drawing. **Innate How the Wiring of Our Brains Shapes Who We Are** *Princeton University Press* A leading neuroscientist explains why your personal traits are more innate than you think What makes you the way you are—and what makes each of us different from everyone else? In *Innate*, leading neuroscientist and popular science blogger Kevin Mitchell traces human diversity and individual differences to their deepest level: in the wiring of our brains. Deftly guiding us through important new research, including his own groundbreaking work, he explains how variations in the

way our brains develop before birth strongly influence our psychology and behavior throughout our lives, shaping our personality, intelligence, sexuality, and even the way we perceive the world. Compelling and original, Innate will change the way you think about why and how we are who we are.

Mechanical Vibrations: Theory and Applications *Cengage Learning* **Mechanical Vibrations: Theory and Applications** takes an applications-based approach at teaching students to apply previously learned engineering principles while laying a foundation for engineering design. This text provides a brief review of the principles of dynamics so that terminology and notation are consistent and applies these principles to derive mathematical models of dynamic mechanical systems. The methods of application of these principles are consistent with popular Dynamics texts. Numerous pedagogical features have been included in the text in order to aid the student with comprehension and retention. These include the development of three benchmark problems which are revisited in each chapter, creating a coherent chain linking all chapters in the book. Also included are learning outcomes, summaries of key concepts including important equations and formulae, fully solved examples with an emphasis on real world examples, as well as an extensive exercise set including objective-type questions.

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Microelectronics, Electromagnetics and Telecommunications Proceedings of the Fifth ICMEET 2019 *Springer* This book discusses the latest developments and outlines future trends in the fields of microelectronics, electromagnetics and telecommunication. It includes original research presented at the International Conference on Microelectronics, Electromagnetics and Telecommunication (ICMEET 2019), organized by the Department of ECE, Raghu Institute of Technology, Andhra Pradesh, India. Written by scientists, research scholars and practitioners from leading universities, engineering colleges and R&D institutes around the globe, the papers share the latest breakthroughs in and promising solutions to the most important issues facing today's society.

Developments and Advances in Defense and Security Proceedings of MICRADS 2019 *Springer* This book gathers the proceedings of the Multidisciplinary International Conference of Research Applied to Defense and Security (MICRADS), held at the Military Engineering Institute, Rio de Janeiro, Brazil, from 8 to 10th May 2019. It covers a variety of topics in systems, communication and defense; strategy and political-administrative vision in defense; and engineering and technologies applied to defense. Given its scope, it offers a valuable resource for practitioners, researchers, and students alike.

Blueprint for Learning Constructing College Courses to Facilitate, Assess, and Document Learning *Stylus Publishing, LLC.* An acclaimed educator presents hands-on advice on teaching that meets today's emphasis on learning outcomes and assessment. This book is informed by the most up-to-date research on how people learn. It is suitable for all instructors in higher education - as well as high school

teachers. Laurie Richlin has been running a workshop on course design for higher education for over fifteen years, modifying and improving it progressively from the feedback of participants, and from what they in turn have taught her. Her goals are to enable participants to appropriately select teaching strategies, to design and create the conditions and experiences that will enable their students to learn; and in the process to develop the scholarly scaffold to document their ongoing course design and achievements. This book familiarizes readers with course design elements; enables them to understand themselves as individuals and teachers; know their students; adapt to the learning environment; design courses that promote deep learning; and assess the impact of the teaching practices and design choices they have made. She provides tools to create a full syllabus, offers guidance on such issues as framing questions that encourage discussion, developing assignments with rubrics, and creating tests. The book is packed with resources that will help readers structure their courses and constitute a rich reference of proven ideas. What Laurie Richlin offers is a intellectual framework, set of tools and best practices to enable readers to design and continually reassess their courses to better meet their teaching goals and the learning needs of their students.

Advances in Computing and Communications, Part II First International Conference, ACC 2011, Kochi, India, July 22-24, 2011. Proceedings, Part II Springer This volume is the second part of a four-volume set (CCIS 190, CCIS 191, CCIS 192, CCIS 193), which constitutes the refereed proceedings of the First International Conference on Computing and Communications, ACC 2011, held in Kochi, India, in July 2011. The 72 revised full papers presented in this volume were carefully reviewed and selected from a large number of submissions. The papers are organized in topical sections on database and information systems; distributed software development; human computer interaction and interface; ICT; internet and Web computing; mobile computing; multi agent systems; multimedia and video systems; parallel and distributed algorithms; security, trust and privacy.

Fundamentals of Internet of Things CRC Press The Internet of Things (IoT) networks have revolutionized the world and have innumerable real-time applications on automation. A few examples include driverless cars, remote monitoring of the elderly, remote order of tea or coffee of your choice from a vending machine, and home/industrial automation amongst others. Fundamentals of Internet of Things build the foundations of IoT networks by leveraging the relevant concepts from signal processing, communications, net-works, and machine learning. The book covers two fundamental components of IoT networks, namely, the Internet and Things. In particular, the book focuses on networking concepts, protocols, clustering, data fusion, localization, energy harvesting, control optimization, data analytics, fog computing, privacy, and security including elliptic curve cryptography and blockchain technology. Most of the existing books are theoretical and without many mathematical details and examples. In addition, some essential topics of the IoT networks are also

missing in the existing books. Features: • The book covers cutting-edge research topics • Provides mathematical understanding of the topics in addition to relevant theory and insights • Includes illustrations with hand-solved numerical examples for visualization of the theory and testing of understanding • Lucid and crisp explanation to lessen the study time of the reader

The book is a complete package of the fundamentals of IoT networks and is suitable for graduate-level students and researchers who want to dive into the world of IoT networks. **Bosch Automotive Electrics and Automotive Electronics Systems and Components, Networking and Hybrid Drive** *Springer Science & Business Media* This is a complete reference guide to automotive electrics and electronics. This new edition of the definitive reference for automotive engineers, compiled by one of the world's largest automotive equipment suppliers, includes new and updated material. As in previous editions different topics are covered in a concise but descriptive way backed up by diagrams, graphs, photographs and tables enabling the reader to better comprehend the subject. This fifth edition revises the classical topics of the vehicle electrical systems such as system architecture, control, components and sensors. There is now greater detail on electronics and their application in the motor vehicle, including electrical energy management (EEM) and discusses the topic of inter system networking within the vehicle. It also includes a description of the concept of hybrid drive a topic that is particularly current due to its ability to reduce fuel consumption and therefore CO2 emissions. This book will benefit automotive engineers and design engineers, automotive technicians in training and mechanics and technicians in garages. It may also be of interest to teachers/ lecturers and students at vocational colleges, and enthusiasts.

Intelligent Systems Proceedings of ICMIB 2020 *Springer Nature* This book features best selected research papers presented at the International Conference on Machine Learning, Internet of Things and Big Data (ICMIB 2020) held at Indira Gandhi Institute of Technology, Sarang, India, during September 2020. It comprises high-quality research work by academicians and industrial experts in the field of machine learning, mobile computing, natural language processing, fuzzy computing, green computing, human-computer interaction, information retrieval, intelligent control, data mining and knowledge discovery, evolutionary computing, IoT and applications in smart environments, smart health, smart city, wireless networks, big data, cloud computing, business intelligence, internet security, pattern recognition, predictive analytics applications in healthcare, sensor networks and social sensing and statistical analysis of search techniques.

MATLAB Tutorial for ECE Students and Engineers *SciTech Publishing* This book combines the teaching of the MATLAB programming language with the presentation and development of carefully selected electrical and computer engineering (ECE) fundamentals. This is what distinguishes it from other books concerned with MATLAB: it is directed specifically to ECE concerns. Students will see, quite explicitly, how and why MATLAB is well suited to solve practical ECE problems. This

book is intended primarily for the freshman or sophomore ECE major who has no programming experience, no background in EE or CE, and is required to learn MATLAB programming. It can be used for a course about MATLAB or an introduction to electrical and computer engineering, where learning MATLAB programming is strongly emphasized. A first course in calculus, usually taken concurrently, is essential. The distinguishing feature of this book is that about 15% of this MATLAB book develops ECE fundamentals gradually, from very basic principles. Because these fundamentals are interwoven throughout, MATLAB can be applied to solve relevant, practical problems. The plentiful, in-depth example problems to which MATLAB is applied were carefully chosen so that results obtained with MATLAB also provide insights about the fundamentals. With this "feedback approach" to learning MATLAB, ECE students also gain a head start in learning some core subjects in the EE and CE curricula. There are nearly 200 examples and over 80 programs that demonstrate how solutions of practical problems can be obtained with MATLAB. After using this book, the ECE student will be well prepared to apply MATLAB in all coursework that is commonly included in EE and CE curricula.

Residential Electrical Wiring Concepts, Applications, and Troubleshooting *Prentice Hall*

mmWave Massive MIMO A Paradigm for 5G *Academic Press*

mmWave Massive MIMO: A Paradigm for 5G is the first book of its kind to hinge together related discussions on mmWave and Massive MIMO under the umbrella of 5G networks. New networking scenarios are identified, along with fundamental design requirements for mmWave Massive MIMO networks from an architectural and practical perspective. Working towards final deployment, this book updates the research community on the current mmWave Massive MIMO roadmap, taking into account the future emerging technologies emanating from 3GPP/IEEE. The book's editors draw on their vast experience in international research on the forefront of the mmWave Massive MIMO research arena and standardization. This book aims to talk openly about the topic, and will serve as a useful reference not only for postgraduates students to learn more on this evolving field, but also as inspiration for mobile communication researchers who want to make further innovative strides in the field to mark their legacy in the 5G arena.

Contains tutorials on the basics of mmWave and Massive MIMO Identifies new 5G networking scenarios, along with design requirements from an architectural and practical perspective Details the latest updates on the evolution of the mmWave Massive MIMO roadmap, considering future emerging technologies emanating from 3GPP/IEEE Includes contributions from leading experts in the field in modeling and prototype design for mmWave Massive MIMO design Presents an ideal reference that not only helps postgraduate students learn more in this evolving field, but also inspires mobile communication researchers towards further innovation

Nature-inspired Metaheuristic Algorithms *Luniver Press*

Modern metaheuristic algorithms such as bee algorithms and harmony search start to demonstrate their power in dealing with tough optimization problems

and even NP-hard problems. This book reviews and introduces the state-of-the-art nature-inspired metaheuristic algorithms in optimization, including genetic algorithms, bee algorithms, particle swarm optimization, simulated annealing, ant colony optimization, harmony search, and firefly algorithms. We also briefly introduce the photosynthetic algorithm, the enzyme algorithm, and Tabu search. Worked examples with implementation have been used to show how each algorithm works. This book is thus an ideal textbook for an undergraduate and/or graduate course. As some of the algorithms such as the harmony search and firefly algorithms are at the forefront of current research, this book can also serve as a reference book for researchers. **Adaptive Antenna Arrays Trends and Applications** *Springer Science & Business Media* This compilation of the works and insights of various key scientists and engineers in this area addresses the current and future trends of scenarios for employing adaptive antenna arrays in communication systems. Ideal as a quick reference for engineers, researchers, advanced undergraduate and postgraduate students. **Cognitive Radio-Oriented Wireless Networks 14th EAI International Conference, CrownCom 2019, Poznan, Poland, June 11-12, 2019, Proceedings** *Springer* This book constitutes the refereed proceedings of the 14th International Conference on Cognitive Radio-Oriented Wireless Networks, CROWNCOM 2019, held in Poznan, Poland, in June 2019. The 30 revised full papers were selected from 48 submissions and present a large scope of research topic also covering IoT in 5G and how cognitive mechanisms shall help leveraging access for numerous devices; mmWave and how specific propagation and operation in these bands bring new sharing mechanisms ; how resource allocation amongst bands (including offload mechanisms) shall be solved. The key focus will be on how rich data analysis can improve the delivery of above defined services. **Pre-apprenticeship Maths and Literacy for General Construction Graduated Exercises and Practice Exam** Pre-apprenticeship Maths and Literacy helps to prepare students seeking to gain a variety of apprenticeships and traineeships. These write-in workbooks combine practical, real-world scenarios and terminology specifically relevant to their chosen industry, and provide students with the mathematical and literacy skills they need to confidently pursue a career within that trade. Mirroring the format of current apprenticeship entry assessments, Pre-apprenticeship Maths and Literacy includes hundreds of questions to increase studentsa eligibility to obtain an apprenticeship or traineeship. It also supports and consolidates concepts that students studying VET (Vocational Educational Training) may use. **Handbook of Position Location Theory, Practice, and Advances** *John Wiley & Sons* A comprehensive review of position location technology – from fundamental theory to advanced practical applications Positioning systems and location technologies have become significant components of modern life, used in a multitude of areas such as law enforcement and security, road safety and navigation, personnel and object tracking, and many more. Position location systems have greatly reduced societal vulnerabilities and

enhanced the quality of life for billions of people around the globe — yet limited resources are available to researchers and students in this important field. **The Handbook of Position Location: Theory, Practice, and Advances** fills this gap, providing a comprehensive overview of both fundamental and cutting-edge techniques and introducing practical methods of advanced localization and positioning. Now in its second edition, this handbook offers broad and in-depth coverage of essential topics including Time of Arrival (TOA) and Direction of Arrival (DOA) based positioning, Received Signal Strength (RSS) based positioning, network localization, and others. Topics such as GPS, autonomous vehicle applications, and visible light localization are examined, while major revisions to chapters such as body area network positioning and digital signal processing for GNSS receivers reflect current and emerging advances in the field. This new edition: Presents new and revised chapters on topics including localization error evaluation, Kalman filtering, positioning in inhomogeneous media, and Global Positioning (GPS) in harsh environments Offers MATLAB examples to demonstrate fundamental algorithms for positioning and provides online access to all MATLAB code Allows practicing engineers and graduate students to keep pace with contemporary research and new technologies Contains numerous application-based examples including the application of localization to drone navigation, capsule endoscopy localization, and satellite navigation and localization Reviews unique applications of position location systems, including GNSS and RFID-based localization systems **The Handbook of Position Location: Theory, Practice, and Advances** is valuable resource for practicing engineers and researchers seeking to keep pace with current developments in the field, graduate students in need of clear and accurate course material, and university instructors teaching the fundamentals of wireless localization. *Horticultural Reviews* *John Wiley & Sons* Contents Contributors ix Dedication: Theodore DeJong xi 1. Molecular Physiology of Fruit Growth in Apple 1 2. Mechanosensing of Plants 43 3. Microgreens: Definitions, Product Types, and Production Practices 85 4. The Durian: Botany, Horticulture, and Utilization 125 5. The genus *Cupressus* L.: Mythology to Biotechnology with Emphasis on Mediterranean Cypress (*Cupressus sempervirens* L.) 213 6. Taxonomy and Botany of the Caricaceae 289 7. Entomopathogens: Potential to Control Thrips in Avocado, with Special Reference to *Beauveria bassiana* 325 **Creating Autonomous Vehicle Systems** *Morgan & Claypool Publishers* This book is the first technical overview of autonomous vehicles written for a general computing and engineering audience. The authors share their practical experiences of creating autonomous vehicle systems. These systems are complex, consisting of three major subsystems: (1) algorithms for localization, perception, and planning and control; (2) client systems, such as the robotics operating system and hardware platform; and (3) the cloud platform, which includes data storage, simulation, high-definition (HD) mapping, and deep learning model training. The algorithm subsystem

extracts meaningful information from sensor raw data to understand its environment and make decisions about its actions. The client subsystem integrates these algorithms to meet real-time and reliability requirements. The cloud platform provides offline computing and storage capabilities for autonomous vehicles. Using the cloud platform, we are able to test new algorithms and update the HD map—plus, train better recognition, tracking, and decision models. This book consists of nine chapters. Chapter 1 provides an overview of autonomous vehicle systems; Chapter 2 focuses on localization technologies; Chapter 3 discusses traditional techniques used for perception; Chapter 4 discusses deep learning based techniques for perception; Chapter 5 introduces the planning and control sub-system, especially prediction and routing technologies; Chapter 6 focuses on motion planning and feedback control of the planning and control subsystem; Chapter 7 introduces reinforcement learning-based planning and control; Chapter 8 delves into the details of client systems design; and Chapter 9 provides the details of cloud platforms for autonomous driving. This book should be useful to students, researchers, and practitioners alike. Whether you are an undergraduate or a graduate student interested in autonomous driving, you will find herein a comprehensive overview of the whole autonomous vehicle technology stack. If you are an autonomous driving practitioner, the many practical techniques introduced in this book will be of interest to you. Researchers will also find plenty of references for an effective, deeper exploration of the various technologies.

Handbook of Position Location Theory, Practice, and Advances John Wiley & Sons A comprehensive review of position location technology — from fundamental theory to advanced practical applications Positioning systems and location technologies have become significant components of modern life, used in a multitude of areas such as law enforcement and security, road safety and navigation, personnel and object tracking, and many more. Position location systems have greatly reduced societal vulnerabilities and enhanced the quality of life for billions of people around the globe — yet limited resources are available to researchers and students in this important field. The *Handbook of Position Location: Theory, Practice, and Advances* fills this gap, providing a comprehensive overview of both fundamental and cutting-edge techniques and introducing practical methods of advanced localization and positioning. Now in its second edition, this handbook offers broad and in-depth coverage of essential topics including Time of Arrival (TOA) and Direction of Arrival (DOA) based positioning, Received Signal Strength (RSS) based positioning, network localization, and others. Topics such as GPS, autonomous vehicle applications, and visible light localization are examined, while major revisions to chapters such as body area network positioning and digital signal processing for GNSS receivers reflect current and emerging advances in the field. This new edition: Presents new and revised chapters on topics including localization error evaluation, Kalman filtering, positioning in inhomogeneous media, and Global Positioning (GPS) in harsh

environments Offers MATLAB examples to demonstrate fundamental algorithms for positioning and provides online access to all MATLAB code Allows practicing engineers and graduate students to keep pace with contemporary research and new technologies Contains numerous application-based examples including the application of localization to drone navigation, capsule endoscopy localization, and satellite navigation and localization Reviews unique applications of position location systems, including GNSS and RFID-based localization systems The Handbook of Position Location: Theory, Practice, and Advances is valuable resource for practicing engineers and researchers seeking to keep pace with current developments in the field, graduate students in need of clear and accurate course material, and university instructors teaching the fundamentals of wireless localization. MIMO System Technology for Wireless Communications *CRC Press* For broadband communications, it was frequency division multiplexing. For optical communications, it was wavelength division multiplexing. Then, for all types of networks it was code division. Breakthroughs in transmission speed were made possible by these developments, heralding next-generation networks of increasing capability in each case. The basic idea is the same: more channels equals higher throughput. For wireless communications, it is space-time coding using multiple-input-multiple-output (MIMO) technology. Providing a complete treatment of MIMO under a single cover, MIMO System Technology for Wireless Communications assembles coverage on all aspects of MIMO technology along with up-to-date information on key related issues. Contributors from leading academic and industrial institutions around the world share their expertise and lend the book a global perspective. They lead you gradually from basic to more advanced concepts, from propagation modeling and performance analysis to space-time codes, various systems, implementation options and limitations, practical system development considerations, field trials, and network planning issues. Linking theoretical analysis to practical issues, the book does not limit itself to any specific standardization or research/industrial initiatives. MIMO is the catalyst for the next revolution in wireless systems, and MIMO System Technology for Wireless Communications lays a thorough and complete foundation on which to build the next and future generations of wireless networks. Artificial Intelligence and Algorithms in Intelligent Systems Proceedings of 7th Computer Science On-line Conference 2018, Volume 2 *Springer* This book presents the latest trends and approaches in artificial intelligence research and its application to intelligent systems. It discusses hybridization of algorithms, new trends in neural networks, optimisation algorithms and real-life issues related to the application of artificial methods. The book constitutes the second volume of the refereed proceedings of the Artificial Intelligence and Algorithms in Intelligent Systems of the 7th Computer Science On-line Conference 2018 (CSOC 2018), held online in April 2018. Proceedings of the 5th International Conference on Frontiers in Intelligent Computing: Theory and Applications

FICTA 2016, Volume 1 *Springer* The book is a collection of high-quality peer-reviewed research papers presented at International Conference on Frontiers of Intelligent Computing: Theory and applications (FICTA 2016) held at School of Computer Engineering, KIIT University, Bhubaneswar, India during 16 - 17 September 2016. The book presents theories, methodologies, new ideas, experiences and applications in all areas of intelligent computing and its applications to various engineering disciplines like computer science, electronics, electrical and mechanical engineering. **Electrical Engineering Concepts and Applications** *Addison Wesley Publishing Company* **Managerial Economics** **Bat Evolution, Ecology, and Conservation** *Springer Science & Business Media* Recent advances in the study of bats have changed the way we understand this illusive group of mammals. This volume consist of 25 chapters and 57 authors from around the globe all writing on the most recent finding on the evolution, ecology and conservation of bats. The chapters in this book are not intended to be exhaustive literature reviews, but instead extended manuscripts that bring new and fresh perspectives. Many chapters consist of previously unpublished data and are repetitive of new insights and understanding in bat evolution, ecology and conservation. All chapters were peer-reviewed and revised by the authors. Many of the chapters are multi-authored to provide comprehensive and authoritative coverage of the topics. **Ordinary Differential Equations and Linear Algebra: A Systems Approach** *SIAM* Ordinary differential equations (ODEs) and linear algebra are foundational postcalculus mathematics courses in the sciences. The goal of this text is to help students master both subject areas in a one-semester course. Linear algebra is developed first, with an eye toward solving linear systems of ODEs. A computer algebra system is used for intermediate calculations (Gaussian elimination, complicated integrals, etc.); however, the text is not tailored toward a particular system. **Ordinary Differential Equations and Linear Algebra: A Systems Approach** systematically develops the linear algebra needed to solve systems of ODEs and includes over 15 distinct applications of the theory, many of which are not typically seen in a textbook at this level (e.g., lead poisoning, SIR models, digital filters). It emphasizes mathematical modeling and contains group projects at the end of each chapter that allow students to more fully explore the interaction between the modeling of a system, the solution of the model, and the resulting physical description. **Concurrent Engineering in Construction Projects** *Routledge* Concurrent Engineering (CE) is a systematic approach to the integrated and concurrent design of products and related processes, including aspects as diverse as manufacture and support. It is only now being carefully applied to the construction sector and offers considerable potential for increasing efficiency and effectiveness. It enables developers to consider all elements of a building or structure's life cycle from the conception stage right through to disposal, and to include issues of quality, cost, schedule, and user requirements. Drawing together papers that reflect various research efforts on the implementation of CE in construction

projects, **Concurrent Engineering in Construction** presents construction professionals and academics with the key issues and technologies important for CE's adoption, starting with fundamental concepts and then going on to the role of organisational enablers and advanced information and communication technologies, then providing conclusions and suggestions of future directions. **Dynamics in Logistics Twenty-Five Years of Interdisciplinary Logistics Research in Bremen, Germany** *Springer* This open access book highlights the interdisciplinary aspects of logistics research. Featuring empirical, methodological, and practice-oriented articles, it addresses the modelling, planning, optimization and control of processes. Chiefly focusing on supply chains, logistics networks, production systems, and systems and facilities for material flows, the respective contributions combine research on classical supply chain management, digitalized business processes, production engineering, electrical engineering, computer science and mathematical optimization. To celebrate 25 years of interdisciplinary and collaborative research conducted at the Bremen Research Cluster for Dynamics in Logistics (LogDynamics), in this book hand-picked experts currently or formerly affiliated with the Cluster provide retrospectives, present cutting-edge research, and outline future research directions. **Schaum's Outline of Theory and Problems of Basic Circuit Analysis** *McGraw-Hill Companies* Confusing Textbooks? Missed Lectures? Not Enough Time?. . Fortunately for you, there's Schaum's Outlines. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. . . This Schaum's Outline gives you. . Practice problems with full explanations that reinforce knowledge. Coverage of the most up-to-date developments in your course field. In-depth review of practices and applications. . . Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time-and get your best test scores!. . Schaum's Outlines-Problem Solved.. . . **Fundamentals of Electrical Engineering** *McGraw-Hill Higher Education* **Rizzoni's Fundamentals of Electrical Engineering** provides a solid overview of the electrical engineering discipline that is especially geared toward the many non-electrical engineering students who take this course. The book was developed to fit the growing trend of the Intro to EE course morphing into a briefer, less comprehensive course. The hallmark feature of this text is its liberal use of practical applications to illustrate important principles. The applications come from every field of engineering and feature exciting technologies. The appeal to non-engineering students are the special features such as Focus on Measurement sections, Focus on Methodology sections, and Make the Connections sidebars. **Electromagnetics "Electromagnetics"** is a thorough text that enables readers to readily grasp

EM fundamentals, develop true problem-solving skills, and really understand and like the material. It is meant as an "ultimate resource" for undergraduate electromagnetics." **Computational Toxicology Electrical and Electronics Fundamentals An Applied Survey of Electrical Engineering** *West Group* **MATLAB-Based Electromagnetics** *Prentice Hall* This title can be used to either complement another electromagnetics text, or as an independent resource. Designed primarily for undergraduate electromagnetics, it can also be used in follow-up courses on antennas, propagation, microwaves, advanced electromagnetic theory, computational electromagnetics, electrical machines, signal integrity, etc. This title also provides practical content to current and aspiring industry professionals. **MATLAB-Based Electromagnetics** provides engineering and physics students and other users with an operational knowledge and firm grasp of electromagnetic fundamentals aimed toward practical engineering applications, by teaching them "hands on" electromagnetics through a unique and comprehensive collection of MATLAB computer exercises and projects. Essentially, the book unifies two themes: it presents and explains electromagnetics using MATLAB on one side, and develops and discusses MATLAB for electromagnetics on the other. MATLAB codes described (and listed) in TUTORIALS or proposed in other exercises provide prolonged benefits of learning. By running codes; generating results, figures, and diagrams; playing movies and animations; and solving a large variety of problems in MATLAB, in class, with peers in study groups, or individually, readers gain a deep understanding of electromagnetics. **Service Oriented, Holonic and Multi-Agent Manufacturing Systems for Industry of the Future** *Proceedings of SOHOMA LATIN AMERICA 2021 Springer* This book approaches its subject matter by promoting concepts, methods and solutions for the digital transformation of manufacturing through service orientation in holonic and agent-based control with distributed intelligence. The scientific theme of the book concerns "Manufacturing as a Service", developed by virtualizing and encapsulating manufacturing resources, activities and controls into cloud networked services in an open perspective that spans models from shop floor resource allocation to enterprise infrastructure sharing. The papers included in the application space have a profound human dedication and aim at solving societal needs serving the partnership of the future—people and industry in the era of Society 5.0. The book's readership includes researchers and engineers working in manufacturing, supply chains and logistics areas who innovate, develop and use digital control solutions and students enrolled in Engineering and Service Science programs.