

## Civil Engineering Basic Knowledge

*A Guide to the Wireless Engineering Body of Knowledge (WEBOK) Necessity of Project Engineering Knowledge in Engineering Curriculum A Guide to the Wireless Engineering Body of Knowledge (WEBOK) Introduction to Basic Concepts in Engineering: Student's Course Handbook Knowledge-based Software Engineering Fundamentals of Electrical Engineering Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills Knowledge Engineering: Practice and Patterns Contemporary Knowledge Engineering and Cognition Experience and Knowledge Management in Software Engineering Requirement Engineering for Knowledge-Intensive Processes Knowledge-Based Software Engineering Engineering and Technology Talent for Innovation and Knowledge-Based Economies Perspective On Holistic Engineering Management, A: Learning, Adapting And Creating Value Circuit Engineering and Quality Assurance Chemical Engineering Economics Reeds Introductions: Physics Wave Concepts for Marine Engineering Applications Lighting Engineering: Applied Calculations Knowledge-Based and Intelligent Information and Engineering Systems Electric Traction - Motive Power and Energy Supply Particle Technology and Engineering Second International Conference on Chemical Engineering Education Visual Quality Assessment by Machine Learning Ten Essential Skills for Electrical Engineers Bulletin of the United States Bureau of Labor Statistics Career Opportunities in the Energy Industry Occupational Employment Statistics Booklet of Definitions Mechanical Engineering Electrochemical Engineering Continuing Education of Engineers Foundations of Materials Science and Engineering Fuzzy Randomness Model-Driven Software Engineering in Practice, Second Edition Knowledge Engineering and Knowledge Management Engineering Careers in Reclamation Inquiry Into Satellite and Missile Programs Introduction to Engineering: Engineering Fundamentals and Concepts Basic Mechanical Engineering Communications Engineering Carbon Materials Science and Engineering*

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*Communications Engineering Jul 24 2019 Communications technologies increasingly pervade our everyday lives, yet the underlying principles are a mystery to most. Even among engineers and technicians, understanding of this complex subject remains limited. However, there is undeniably a growing need for all technology disciplines to gain intimate awareness of how their fields are affected by a more densely networked world. The computer science field in particular is profoundly affected by the growing dominance of communications, and computer scientists must increasingly engage with electrical engineering concepts. Yet communications technology is often perceived as a challenging subject with a steep learning curve. To address this need, the authors have transformed classroom-tested materials into this accessible textbook to give readers an intimate understanding of fundamental communications concepts. Readers are introduced to the key essentials, and each selected topic is discussed in detail to promote mastery. Engineers and computer scientists will gain an understanding of concepts that can be readily applied to their respective fields, as well as provide the foundation for more advanced study of communications. Provides a thorough grounding in the basics by focusing on select key concepts Clarifies comprehension of the subject via detailed explanation and illustration Helps develop an intuitive sense of both digital and analog principles Introduces key broadcasting, wireless and wired systems Helps bridge the knowledge gap between software and electrical engineering Requires only basic calculus and trigonometry skills Classroom tested in undergraduate CS and EE programs Communications Engineering by Lee, Chiu, and Lin will give advanced undergraduates in computer science and beginning students of electrical engineering a rounded understanding of communications technologies. The book also serves as a key introduction to specialists in industry, or anyone who desires a working understanding of communications technologies.*

*Bulletin of the United States Bureau of Labor Statistics Oct 07 2020*

*Introduction to Engineering: Engineering Fundamentals and Concepts Sep 25 2019* The future presents society with enormous challenges on many fronts, such as energy, infrastructures in urban settings, mass migrations, mobility, climate, healthcare for an aging population, social security and safety. In the coming decennia, leaps in scientific discovery and innovations will be necessary in social, political, economic and technological fields. Technology, the domain of engineers and engineering scientists, will be an essential component in making such innovations possible. Engineering is the social practice of conceiving, designing, implementing, producing and sustaining complex technological products, processes or systems. The complexity is often caused by the behaviour of the system development that changes with time that cannot be predicted in advance from its constitutive parts. This is especially true when human decisions play a key role in solving the problem. Solving complex systems requires a solid foundation in mathematics and the natural sciences, and an understanding of human nature. Therefore, the skills of the future engineers must extend over an array of fields. The book was born from the "Introduction to Engineering" courses given by the author in various universities. At that time the author was unable to find one text book, that covered all the subjects of the course. The book claims to fulfil this gap.

*Second International Conference on Chemical Engineering Education Jan 10 2021* Second International Conference on Chemical Engineering Education presents the situation in chemical engineering education in Germany, Hungary, Spain, Japan, and in the United States. This book depicts an awareness of the problems of professional education together with a wide spectrum of opinions on their solution. Organized into 39 chapters, this book begins with an overview of the actual situation of chemical engineering education program in Spain. This text then examines the detailed formalities of chemical engineering in secondary schools. Other chapters consider the change in chemical engineering education in Japan due to the change of chemical industries as well as by a great change of students' attitude. This book discusses as well the curriculum proposal for the education of undergraduate and graduate levels as well as foreign students' education. The final chapter reviews the European situation of chemical engineering education system. This book is a valuable resource for teachers and students of chemical engineering.

*Engineering and Technology Talent for Innovation and Knowledge-Based Economies Oct 19 2021* This book introduces and analyzes the models for engineering leadership and competency skills, as well as frameworks for industry-academia collaboration and is appropriate for students, researchers, and professionals interested in continuous professional development. The authors look at the organizational structures of engineering education in knowledge-based economies and examine the role of innovation and how it is encouraged in schools. It also provides a methodological framework and toolkit for investigating the needs of engineering and technology skills in national contexts. A detailed empirical case study is included that examines the leadership competencies that are needed in knowledge-based economies and how one university encourages these in their program. The book concludes with conceptual modeling and proposals of specific organizational structures for implementation in engineering schools, in order to enable the development of necessary skills for future engineering graduates.

*Mechanical Engineering Jul 04 2020*

*Foundations of Materials Science and Engineering Mar 31 2020* "The subject of materials science and engineering is an essential course to engineers and scientists from all disciplines. With advances in science and technology, development of new engineering fields, and changes in the engineering profession, today's engineer must have a deeper, more diverse, and up-to-date knowledge of materials-related issues. At a minimum, all engineering students must have the basic knowledge of the structure, properties, processing, and performance of various classes of engineering materials. This is a crucial first step in the materials selection decisions in everyday rudimentary engineering problems. A more in-depth understanding of the same topics is necessary for designers of complex systems, forensic (materials failure) analysts, and research and development engineers/scientists"--

*Occupational Employment Statistics Booklet of Definitions Aug 05 2020*

*Knowledge Engineering: Practice and Patterns Mar 24 2022* This book constitutes the refereed proceedings of the 16th International Conference on Knowledge Engineering and Knowledge Management, EKAW 2008, held in Acitrezza, Sicily, Italy, in September/October 2008. The 17 revised full papers and 15 revised short papers presented together with 3 invited talks were carefully reviewed and selected from 102 submissions. The papers are organized in topical sections on knowledge patterns and knowledge representation, matching ontologies and data integration, natural language, knowledge acquisition and annotations, search, query and interaction, as well as ontologies.

*A Guide to the Wireless Engineering Body of Knowledge (WEBOK) Aug 29 2022 The ultimate reference on wireless technology—now updated and revised Fully updated to incorporate the latest developments and standards in the field, A Guide to the Wireless Engineering Body of Knowledge, Second Edition provides industry professionals with a one-stop reference to everything they need to design, implement, operate, secure, and troubleshoot wireless networks. Written by a group of international experts, the book offers an unmatched breadth of coverage and a unique focus on real-world engineering issues. The authors draw upon extensive experience in all areas of the technology to explore topics with proven practical applications, highlighting emerging areas such as Long Term Evolution (LTE) in wireless networks. The new edition is thoroughly revised for clarity, reviews wireless engineering fundamentals, and features numerous references for further study. Based on the areas of expertise covered in the IEEE Wireless Communication Engineering Technologies (WCET) exam, this book explains: Wireless access technologies, including the latest in mobile cellular technology Core network and service architecture, including important protocols and solutions Network management and security, from operations process models to key security issues Radio engineering and antennas, with specifics on radio frequency propagation and wireless link design Facilities infrastructure, from lightning protection to surveillance systems With this trusted reference at their side, wireless practitioners will get up to speed on advances and best practices in the field and acquire the common technical language and tools needed for working in different parts of the world.*

*A Guide to the Wireless Engineering Body of Knowledge (WEBOK) Oct 31 2022 The ultimate reference book for professionals in the wireless industry The information presented in this book reflects the evolution of wireless technologies, their impact on the profession, and the industry's commonly accepted best practices. Organized into seven main areas of expertise, A Guide to the Wireless Engineering Body of Knowledge (WEBOK) enhances readers' understanding of: Wireless access technologies Network and service architecture Network management and security Radio frequency engineering, propagation, and antennas Facilities infrastructure Agreements, standards, policies, and regulations Wireless engineering fundamentals Complemented with a large number of references and suggestions for further reading, the WEBOK is an indispensable resource for anyone working in the wireless industry.*

*Engineering Careers in Reclamation Nov 27 2019*

*Continuing Education of Engineers May 02 2020 This report of the Panel of Continuing Education was prepared as part of the study on engineering education and practice in the United States that was conducted under the guidance of the National Research Council's Committee on the Education and Utilization of the Engineer. The report deals with: (1) "Participation in Continuing Education--The Engineer's Perspective"; (2) "The Role of Industry"; (3) "The Role of the University"; (4) "The Role of Professional Societies"; (5) "The Role of Proprietary Schools"; and (6) "The Role of Government." A reference list and bibliography are included, along with appendices which address a pilot study for a study of policymakers' attitudes toward continuing education, a list of 1984 continuing education programs of technical societies, and a professional society survey. (TW)*

*Circuit Engineering and Quality Assurance Aug 17 2021 Is Circuit Engineering what you want to learn? Always wondered how one becomes an Electrical Engineer? Do Semi-Conductors and Circuit Boards interest you? Purchase Circuit Engineering to discover everything you need to know about basic electronics. Step by step to increase your electrical skills. Learn the anatomy of a circuit. All your basic knowledge in one purchase! You need to get it now to know what's inside as it can't be shared here! Purchase Circuit Engineering TODAY! Is Quality Assurance what you want to learn? Always wondered how one becomes a better software developer? Does it interest you how to achieve this so quickly? Purchase Quality Assurance to discover everything you need to know about testing and software quality! Step by step to increase your software skill set. Learn how to dominate computer systems. All your basic knowledge in one purchase! You need to get it now to know what's inside as it can't be shared here! Purchase Quality Assurance TODAY!*

*Ten Essential Skills for Electrical Engineers Nov 07 2020 The book is a review of essential skills that an entry-level or experienced engineer must be able to demonstrate on a job interview and perform when hired. It will help engineers prepare for interviews by demonstrating application of basic principles to practical problems. Hiring managers will find the book useful because it defines a common ground between the student's academic background and the company's product or technology-specific needs, thereby allowing managers to minimize their risk when making hiring decisions. Ten Essential Skills contains a series of "How to" chapters. Each chapter realizes a goal, such as designing an active filter or designing a discrete servo. The primary value of these chapters, however, is that they apply engineering fundamentals to practical problems. The book is a handy reference for engineers in their first years on the job. Enables recent graduates in engineering to succeed in challenging technical interviews Written in an intuitive, easy-to-follow style for the benefit of busy*

students and employers Book focuses on the intersection between company-specific knowledge and engineering fundamentals Companion website includes interview practice problems and advanced material Knowledge-Based Software Engineering Nov 19 2021 This book constitutes the refereed proceedings of the 11th Joint Conference on Knowledge-Based Software-Engineering, JCKBSE 2014, held in Volgograd, Russia, in September 2014. The 59 full and 3 short papers presented were carefully reviewed and selected from 197 submissions. The papers are organized in topical sections on methodology and tools for knowledge discovery and data mining; methods and tools for software engineering education; knowledge technologies for semantic web and ontology engineering; knowledge-based methods and tools for testing, verification and validation, maintenance and evolution; natural language processing, image analysis and recognition; knowledge-based methods and applications in information security, robotics and navigation; decision support methods for software engineering; architecture of knowledge-based systems, including intelligent agents and softbots; automating software design and synthesis; knowledge management for business processes, workflows and enterprise modeling; knowledge-based methods and applications in bioscience, medicine and justice; knowledge-based requirements engineering, domain analysis and modeling; intelligent user interfaces and human-machine interaction; lean software engineering; program understanding, programming knowledge, modeling programs and programmers.

Introduction to Basic Concepts in Engineering: Student's Course Handbook Jul 28 2022 "Introduction to Basic Concepts in Engineering" is a college-prep course targeted towards high school students with an interest in pursuing an education in engineering. The course serves both to promote interest in engineering to prospective students and to prepare students to succeed in a university undergraduate engineering program by building a solid foundation of basic knowledge and skills. This handbook serves as a guide and as a resource to the student throughout the course. The second edition contains additional lab activities, expanded subject matter, and improved and streamlined example problems that focus on theory rather than complex calculations. The second edition contains additional lab activities, expanded subject matter, and improved and streamlined example problems that focus on theory rather than complex calculations. Key Features- Example problems to be worked in-class to support concepts as they are introduced - 15 lab activities provide hands-on experience, interactive learning, and develop key skills- Practice problems provide for independent application of theory and reinforce key concepts through practice - Supports your learning and development as you learn about engineering

Requirement Engineering for Knowledge-Intensive Processes Dec 21 2021 Sven-Michael Wundenberg discusses the development of a reference architecture for the Learning Management System's (LMS) selection-process aimed at the system's implementation in a polytechnic-knowledge-transfer organization. The focus lies on the requirement engineering (RE) process's quintessence based on research about standard RE-procedures and -approaches combined with LMS-basic knowledge and LMS-best-practice experiences. The resulting reference-architecture, particularly its frameworks and questionnaires, are tested prototypically in the real-life instance of a polytechnic school, the Technikerschule Augsburg (TA), and delivers outstanding results.

Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills Apr 24 2022 Computer science graduates often find software engineering knowledge and skills are more in demand after they join the industry. However, given the lecture-based curriculum present in academia, it is not an easy undertaking to deliver industry-standard knowledge and skills in a software engineering classroom as such lectures hardly engage or convince students. Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills combines recent advances and best practices to improve the curriculum of software engineering education. This book is an essential reference source for researchers and educators seeking to bridge the gap between industry expectations and what academia can provide in software engineering education.

Carbon Materials Science and Engineering Jun 22 2019

Electrochemical Engineering Jun 02 2020 A Comprehensive Reference for Electrochemical Engineering Theory and Application From chemical and electronics manufacturing, to hybrid vehicles, energy storage, and beyond, electrochemical engineering touches many industries—any many lives—every day. As energy conservation becomes of central importance, so too does the science that helps us reduce consumption, reduce waste, and lessen our impact on the planet. Electrochemical Engineering provides a reference for scientists and engineers working with electrochemical processes, and a rigorous, thorough text for graduate students and upper-division undergraduates. Merging theoretical concepts with widespread application, this book is designed to provide critical knowledge in a real-world context. Beginning with the fundamental principles underpinning the field, the discussion moves into industrial and manufacturing processes that blend central ideas to provide an

advanced understanding while explaining observable results. Fully-worked illustrations simplify complex processes, and end-of chapter questions help reinforce essential knowledge. With in-depth coverage of both the practical and theoretical, this book is both a thorough introduction to and a useful reference for the field. Rigorous in depth, yet grounded in relevance, *Electrochemical Engineering: Introduces basic principles from the standpoint of practical application Explores the kinetics of electrochemical reactions with discussion on thermodynamics, reaction fundamentals, and transport Covers battery and fuel cell characteristics, mechanisms, and system design Delves into the design and mechanics of hybrid and electric vehicles, including regenerative braking, start-stop hybrids, and fuel cell systems Examines electrodeposition, redox-flow batteries, electrolysis, regenerative fuel cells, semiconductors, and other applications of electrochemical engineering principles Overlapping chemical engineering, chemistry, material science, mechanical engineering, and electrical engineering, electrochemical engineering covers a diverse array of phenomena explained by some of the important scientific discoveries of our time. Electrochemical Engineering provides the critical understanding required to work effectively with these processes as they become increasingly central to global sustainability.*

*Experience and Knowledge Management in Software Engineering Jan 22 2022 Nowadays, there is software everywhere in our life. It controls cars, airplanes, factories, medical implants. Without software, banking, logistics and transportation, media, and even scientific research would not function in the accustomed way. Building and maintaining software is a knowledge-intensive endeavour and requires that specific experiences are handled successfully. However, neither knowledge nor experience can be collected, stored, and shipped like physical goods, instead these delicate resources require dedicated techniques. Knowledge and experience are often called company assets, yet this is only part of the truth: it is only software engineers and other creative employees who will effectively exploit an organisation's knowledge and experience. Kurt Schneider's textbook is written for those who want to make better use of their own knowledge and experience – either personally or within their group or company. Everyone related to software development will benefit from his detailed explanations and case studies: project managers, software engineers, quality assurance responsables, and knowledge managers. His presentation is based on years of both practical experience, with companies such as Boeing, Daimler, and Nokia, and research in renowned environments, such as the Fraunhofer Institute. Each chapter is self-contained, it clearly states its learning objectives, gives in-depth presentations, shows the techniques' practical relevance in application scenarios, lists detailed references for further reading, and is finally completed by exercises that review the material presented and also challenge further, critical examinations. The overall result is a textbook that is equally suitable as a personal resource for self-directed learning and as the basis for a one-semester course on software engineering and knowledge management.*

*Necessity of Project Engineering Knowledge in Engineering Curriculum Sep 29 2022*

*Basic Mechanical Engineering Aug 24 2019 Special Features:* · Simple language, point-wise descriptions in easy steps. · Chapter organization in exact agreement with sequence of syllabus. · Simple line diagrams. · Concepts supported by ample number of solved examples and illustrations. · Pedagogy in tune with examination pattern of RGTU. · Large number of Practice problems. · Model Question Papers About The Book: This book is designed to suit the core engineering course on basic mechanical engineering offered to first year students of all engineering colleges in Madhya Pradesh. This book meets the syllabus requirements of Basic Mechanical Engineering and has been written for the first year students (all branches) of BE Degree course of RGPV Bhopal affiliated Engineering Institutes. A number of illustrations have been used to explain and clarify the subject matter. Numerous solved examples are presented to make understanding the content of the book easy. Objective type questions have been provided at the end of each chapter to help the students to quickly review the concepts.

*Inquiry Into Satellite and Missile Programs Oct 26 2019*

*Particle Technology and Engineering Feb 08 2021 Particle Technology and Engineering: An Engineer's Guide to Particles, Powders and Multiphase Systems presents the basic knowledge and fundamental concepts that are needed by engineers dealing with particles and powders. Users will find a comprehensive reference and introduction to important topics, ranging from single particle characterization to bulk powder properties and complex multiphase gas-solid-liquid systems. It emphasizes quantitative explanation and theoretical concepts, and contains numerous case studies of practical applications. The book is structured into four parts beginning with basic information on single particle properties and their interaction with solids and gas/liquids, the fundamental characteristics of bulk solids (powders), the principles of multiphase systems, including fluidization and pneumatic conveying, and advanced numerical methods and measurement techniques for particle engineering. Four thorough sections provide readers with coverage of core topics, including particle*

mechanics and characterization, characterization and mechanics of bulk solids, multiphase particle engineering, and advanced particle engineering Practical focus is supported by worked examples, case studies and applied topics Enables engineers to build their knowledge and skills to understand and work with particulate systems

*Fundamentals of Electrical Engineering* May 26 2022 Real-world engineering problems are rarely, if ever, neatly divided into mechanical, electrical, chemical, civil, and other categories. Engineers from all disciplines eventually encounter computer and electronic controls and instrumentation, which require at least a basic knowledge of electrical and other engineering specialties, as well as associated economics, and environmental, political, and social issues. Co-authored by Charles Gross—one of the most well-known and respected professors in the field of electric machines and power engineering—and his world-renowned colleague Thad Roppel, *Fundamentals of Electrical Engineering* provides an overview of the profession for engineering professionals and students whose specialization lies in areas other than electrical. For instance, civil engineers must contend with commercial electrical service and lighting design issues. Mechanical engineers have to deal with motors in HVAC applications, and chemical engineers are forced to handle problems involving process control. Simple and easy-to-use, yet more than sufficient in rigor and coverage of fundamental concepts, this resource teaches EE fundamentals but omits the typical analytical methods that hold little relevance for the audience. The authors provide many examples to illustrate concepts, as well as homework problems to help readers understand and apply presented material. In many cases, courses for non-electrical engineers, or non-EEs, have presented watered-down classical EE material, resulting in unpopular courses that students hate and senior faculty members understandingly avoid teaching. To remedy this situation—and create more well-rounded practitioners—the authors focus on the true EE needs of non-EEs, as determined through their own teaching experience, as well as significant input from non-EE faculty. The book provides several important contemporary interdisciplinary examples to support this approach. The result is a full-color modern narrative that bridges the various EE and non-EE curricula and serves as a truly relevant course that students and faculty can both enjoy.

*Fuzzy Randomness* Feb 29 2020 The subject of the book is the comprehensive consideration of uncertainty in the numerical analysis, the safety assessment, and the design of structures. Stochastic as well as non-stochastic uncertainty is treated on the basis of the superordinated uncertainty model fuzzy randomness. This new uncertainty model contains the special cases of real valued random variables and fuzzy variables and permits to take account of both uncertainty characteristics simultaneously. The book introduces to the problem of uncertainty and provides a current survey of relevant uncertainty models and their application in civil engineering. The necessary, special mathematical basics of the fuzzy set theory and the theory of fuzzy random variables are explained in an engineering manner and illustrated by way of examples. Basic ideas and methods for appropriately quantifying uncertain structural parameters are presented and demonstrated by means of characteristic examples. For processing uncertainty in structural analysis, safety assessment, and structural design completely new algorithms are introduced and described in detail as fuzzy structural analysis, fuzzy probabilistic safety assessment, and fuzzy cluster design. The application of the new methods is demonstrated for selected examples from civil engineering, their essential advantages are emphasized. For the first time this represents a coherent, overall concept for considering uncertainty in civil engineering. The book in particular addresses to civil engineers and requires a university degree as well as basic knowledge in stochastics. But also for mechanical engineers, colleagues from applied mathematics, and other people who are interested in uncertainty problems the book represents a suitable introduction to the problem of uncertainty modeling and provides general solutions and algorithms, which may also be applied to problems from other fields beyond engineering.

*Perspective On Holistic Engineering Management, A: Learning, Adapting And Creating Value* Sep 17 2021 Today, a prosperous technology company can be disrupted and put out of business in a blink of an eye. The development of many different technologies that once took years can be done in months or weeks. There are also few examples where the engineering work is completely contained in one company or one engineering organization. Business strategies have evolved. The analysis of competitive forces in an industry has matured to include the concepts of disruptive innovation and coopetition. In an ecosystem characterized by rapid changes in technology and how it is developed, an engineering R&D organization will quickly become irrelevant if it fails to keep the pace of innovation needed to succeed. This book provides readers with a holistic approach to engineering management. We have seen that successful managers create a strong foundation of a common culture that enables learning, value creation, diversity and inclusion. They create organizations that tightly connect the core engineering functions of strategic planning, research and development and are able to

comprehend and direct a broader R&D system that stretches well beyond their own organization's boundary. Doing all of this to extract the greatest value in the least amount of time is what we call holistic engineering management. The content for this book is based on over 105 years of combined experience working in a rapidly changing industry. In most chapters, practical examples and case studies of the concepts provided are given. As noted in the foreword by Pat Gelsinger (CEO, VMWare) and in comments from other technology leaders: Aart de Geus (Chairman and co-CEO, Synopsys, Inc.), Aicha Evans (CEO, Zoox, Inc.), William M Holt, (former Executive VP, GM, Intel, Corp.), and Amir Faintuch (Senior VP, GM, GlobalFoundries, Inc.), this book will be valuable for students of engineering management and current engineering managers.

*Electric Traction - Motive Power and Energy Supply* Mar 12 2021 This book conveys mechanical fundamentals of electric railway propulsion, which includes rail-bound guidance, transmission of traction effort from wheel to rail under the influence of non-constant levels of adhesion and the transmission of motor torque to a spring-mounted and thus sliding drive set.

*Model-Driven Software Engineering in Practice, Second Edition* Jan 28 2020 This book discusses how model-based approaches can improve the daily practice of software professionals. This is known as Model-Driven Software Engineering (MDSE) or, simply, Model-Driven Engineering (MDE). MDSE practices have proved to increase efficiency and effectiveness in software development, as demonstrated by various quantitative and qualitative studies. MDSE adoption in the software industry is foreseen to grow exponentially in the near future, e.g., due to the convergence of software development and business analysis. The aim of this book is to provide you with an agile and flexible tool to introduce you to the MDSE world, thus allowing you to quickly understand its basic principles and techniques and to choose the right set of MDSE instruments for your needs so that you can start to benefit from MDSE right away. The book is organized into two main parts. The first part discusses the foundations of MDSE in terms of basic concepts (i.e., models and transformations), driving principles, application scenarios, and current standards, like the well-known MDA initiative proposed by OMG (Object Management Group) as well as the practices on how to integrate MDSE in existing development processes. The second part deals with the technical aspects of MDSE, spanning from the basics on when and how to build a domain-specific modeling language, to the description of Model-to-Text and Model-to-Model transformations, and the tools that support the management of MDSE projects. The second edition of the book features: a set of completely new topics, including: full example of the creation of a new modeling language (IFML), discussion of modeling issues and approaches in specific domains, like business process modeling, user interaction modeling, and enterprise architecture complete revision of examples, figures, and text, for improving readability, understandability, and coherence better formulation of definitions, dependencies between concepts and ideas addition of a complete index of book content In addition to the contents of the book, more resources are provided on the book's website <http://www.mdse-book.com>, including the examples presented in the book.

*Knowledge-Based and Intelligent Information and Engineering Systems* Apr 12 2021 The four-volume set LNAI 6276--6279 constitutes the refereed proceedings of the 14th International Conference on Knowledge-Based Intelligent Information and Engineering Systems, KES 2010, held in Cardiff, UK, in September 2010. The 272 revised papers presented were carefully reviewed and selected from 360 submissions. They present the results of high-quality research on a broad range of intelligent systems topics.

*Visual Quality Assessment by Machine Learning* Dec 09 2020 The book encompasses the state-of-the-art visual quality assessment (VQA) and learning based visual quality assessment (LB-VQA) by providing a comprehensive overview of the existing relevant methods. It delivers the readers the basic knowledge, systematic overview and new development of VQA. It also encompasses the preliminary knowledge of Machine Learning (ML) to VQA tasks and newly developed ML techniques for the purpose. Hence, firstly, it is particularly helpful to the beginner-readers (including research students) to enter into VQA field in general and LB-VQA one in particular. Secondly, new development in VQA and LB-VQA particularly are detailed in this book, which will give peer researchers and engineers new insights in VQA.

*Reeds Introductions: Physics Wave Concepts for Marine Engineering Applications* Jun 14 2021 Reeds Introductions: Physics Wave Concepts for Marine Engineering Applications covers the fundamental theoretical maritime physics concepts which underpin electromagnetic wave and sonar principles as developed in most maritime-related courses, whether Naval, Coastguard or Merchant Marine engineering. For these reasons it is vital that maritime users have a basic understanding of the concepts upon which many essential modern sea-going sensors and communications devices now operate. Knowledge regarding electromagnetic waves and electromagnetic devices is an established merchant navy sea service requirement, particularly for the Standards in Training and Certification in Watchkeeping (STCW95) qualification in various Maritime Coastguard

Agency exams, e.g. Marine Electrotechnology (as Chief Engineer and Second Engineer), as mandated by the UK Department for Transport. This short introductory book is written as simply as possible to support growing numbers of overseas students for whom English is not their first language. This volume provides a comprehensive study of maritime physics principles and provides a firm foundation prior to reading and studying of the following Reeds Marine Engineering series: Vols 1, 3, 6, 7, 14 and 15. Students having read this easy-to-read volume will be better prepared for the more in depth study of the other volumes listed.

Knowledge Engineering and Knowledge Management Dec 29 2019 This book constitutes the refereed proceedings of the 20th International Conference on Knowledge Engineering and Knowledge Management, EKAW 2016, held in Bologna, Italy, in November 2016. The 51 full papers presented were carefully reviewed and selected from 171 submissions. The papers cover all aspects of eliciting, acquiring, modeling, and managing knowledge, the construction of knowledge-intensive systems and services for the Semantic Web, knowledge management, e-business, natural language processing, intelligent information integration, personal digital assistance systems, and a variety of other related topics. A special focus was on "evolving knowledge", i.e., the impact of space and time on knowledge representation, concerning all aspects of the management and acquisition of knowledge representation of evolving, contextual, and local models.

Career Opportunities in the Energy Industry Sep 05 2020 Presents one hundred and thirty job descriptions for careers within the energy industry, and includes positions dealing with coal, electric, nuclear energy, renewable energy, engineering, machine operation, science, and others.

Contemporary Knowledge Engineering and Cognition Feb 20 2022 This book has its source in the question of whether any knowledge engineering tools can be applied or analyzed in cognition research and what insights and methods of cognitive science might be relevant for knowledge engineers. It presents the proceedings of a workshop organized by the Special Interest Groups Cognition and Knowledge Engineering of the German Society for Informatics, held in February 1992 in Kaiserslautern. The book is structured into three parts. The first part contrasts work in knowledge engineering with approaches from the side of the "soft sciences". The second part deals with case-based approaches in expert systems. Cognition research and the cognitive adequacy of expert systems are discussed in the third part. Contributions from Canada, England, France, Switzerland, and the USA demonstrate how knowledge engineering and cognitive science are woven together internationally.

Chemical Engineering Economics Jul 16 2021 least, the author wishes to thank his constantly helpful wife Maggie and his secretary Pat Weimer; the former for her patience, encouragement, and for acting as a sounding-board, and the latter who toiled endlessly, cheerfully, and most competently on the book's preparation. CONTENTS Preface / iii 1. INTRODUCTION / 1 Frequently Used Economic Studies / 2 Basic Economic Subjects / 3 Priorities / 3 Problems / 6 Appendixes / 6 References / 6 2. EQUIPMENT COST ESTIMATING / 8 Manufacturers' Quotations / 8 Estimating Charts / 10 Size Factoring Exponents / 11 Inflation Cost Indexes / 13 Installation Factor / 16 Module Factor / 18 Estimating Accuracy / 19 Estimating Example / 19 References / 21 3. PLANT COST ESTIMATES / 22 Accuracy and Costs of Estimates / 22 Cost Overruns / 25 Plant Cost Estimating Factors / 26 Equipment Installation / 28 Instrumentation / 30 v vi CONTENTS Piping / 30 Insulation / 30 Electrical / 30 Buildings / 32 Environmental Control / 32 Painting, Fire Protection, Safety Miscellaneous / 32 Yard Improvements / 32 Utilities / 32 Land / 33 Construction and Engineering Expense, Contractor's Fee, Contingency / 33 Total Multiplier / 34 Complete Plant Estimating Charts / 34 Cost per Ton of Product / 35 Capital Ratio (Turnover Ratio) / 35 Factoring Exponents / 37 Plant Modifications / 38 Other Components of Total Capital Investment / 38 Off-Site Facilities / 38 Distribution Facilities / 39 Research and Development, Engineering, Licensing / 40 Working Capital / 40

Lighting Engineering: Applied Calculations May 14 2021 'Lighting Engineering: Applied Calculations' describes the mathematical background to the calculation techniques used in lighting engineering and links them to the applications with which they are used. The fundamentals of flux and illuminance, colour, measurement and optical design are covered in detail. There are detailed discussions of specific applications, including interior lighting, road lighting, tunnel lighting, floodlighting and emergency lighting. The authors have used their years of experience to provide guidance for common mistakes and useful techniques including worked examples and case studies. The last decade has seen the universal application of personal computers to lighting engineering on a day-to-day basis. Many calculations that were previously impracticable are therefore now easily accessible to any engineer or designer who has access to an appropriate computer program. However, a grasp of the underlying calculation principles is still necessary in order to utilise these technologies to the full. Written by two of the leading authorities on this subject, 'Lighting Engineering' is essential reading for practising lighting engineers, designers and architects, and students in the field of lighting.



*Knowledge-based Software Engineering Jun 26 2022 The papers in this publication address many topics in the context of knowledge-based software engineering, including new challenges that have arisen in this demanding area of research. Topics in this book are: knowledge-based requirements engineering, domain analysis and modeling; development processes for knowledge-based applications; knowledge acquisition; software tools assisting the development; architectures for knowledge-based systems and shells including intelligent agents; intelligent user interfaces and human-machine interaction; development of multi-modal interfaces; knowledge technologies for semantic web; internet-based interactive applications; knowledge engineering for process management and project management; methodology and tools for knowledge discovery and data mining; knowledge-based methods and tools for testing, verification and validation, maintenance and evolution; decision support methods for software engineering and cognitive systems; knowledge management for business processes, workflows and enterprise modeling; program understanding, programming knowledge, modeling programs and programmers; and software engineering methods for intelligent tutoring systems.*