Software Maintenance Concepts And Practice

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Encyclopedia of Software Engineering Three-Volume Set (Print) - Phillip A. Laplante 2010-11-22
Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk
Software Maintenance Success Recipes - Donald J. Reifer 2016-04-19
Dispelling much of the folklore surrounding software maintenance, Software Maintenance Success Recipes identifies actionable formulas for success based on in-depth analysis of more than 200 real-world maintenance projects. It details the set of factors that are usually present when effective software maintenance teams do their work and instructs on
Software Quality - Daniel Galin 2018-03-27
The book presents a comprehensive discussion on software quality issues and software quality assurance (SQA) principles and practices, and lays special emphasis on implementing and managing SQA. Primarily designed to serve three audiences; universities and college students, vocational training participants, and software engineers and software development managers, the book may be applicable to all personnel engaged in a software projects Features: A broad view of SQA. The book delves into SQA issues, going beyond the classic boundaries of custom-made software development to also cover in-house software development, subcontractors, and readymade software. An up-to-date wide-range coverage of SQA and SQA related topics. Providing comprehensive coverage on multifarious SQA subjects, including topics, hardly explored till in SQA texts. A systematic presentation of the SQA function and its tasks: establishing the SQA processes, planning, coordinating, follow-up, review and evaluation of SQA processes. Focus on SQA implementation issues. Specialized chapter sections, examples, implementation tips, and topics for discussion. Pedagogical support: Each chapter includes a real-life mini case study, examples, a summary, selected bibliography, review questions and topics for discussion. The book is also supported by an Instructor’s Guide.
Software Design and Development: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources 2013-07-31
Innovative tools and techniques for the development and design of software systems are essential to the problem solving and planning of software solutions. Software Design and Development: Concepts, Methodologies, Tools, and Applications brings together the best practices of theory and implementation in the development of software systems. This reference source is essential for researchers, engineers, practitioners, and scholars seeking the latest knowledge on the techniques, applications, and methodologies for the design and development of software systems.
Advances in Software Engineering, Education, and e-Learning - Hamid R. Arabnia 2021-09-09
This book presents the proceedings of four conferences: The 16th International Conference on Frontiers in Education: Computer Science and Computer Engineering + STEM (FECS'20), The 16th International Conference on Foundations of Computer Science (FCS'20), The 18th International Conference on Software Engineering Research and Practice (SERP'20), and The 19th International Conference on e-Learning, e-Business, Enterprise Information Systems, & e-Government (EEE'20). The conferences took place in Las Vegas, NV, USA, July 27-30, 2020 as part of the larger 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20), which features 20 major tracks. Authors include academics, researchers, professionals, and students. This book contains an open access chapter entitled, "Advances in Software Engineering, Education, and e-Learning". Presents the proceedings of four conferences as part of the 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20); Includes the tracks Computer Engineering + STEM, Foundations of Computer Science, Software Engineering Research, and e-Learning, e-Business, Enterprise Information Systems, & e-Government; Features papers from FECS'20, FCS'20, SERP'20, EEE'20, including one open access chapter.
Software Quality - R. A. Khan 2006
This work examines software quality assurance in practice and includes standards and models.
System Engineering Analysis, Design, and Development - Charles S. Wasson 2015-11-16
Praise for the first edition: “This excellent text will be useful to everysystem engineer (SE) regardless of the domain. It covers ALLrelevant SE material and does so in a very clear, methodicalfashion. The breadth and depth of the author's presentation ofSE principles and practices is outstanding.” –Philip Allen This textbook presents a comprehensive, step-by-step guide toSystem Engineering analysis, design, and development via anintegrated set of concepts, principles, practices, andmethodologies. The methods presented in this text apply to any typeof human system -- small, medium, and large organizational systemsand system development projects delivering engineered systems orservices across multiple business sectors such as medical,transportation, financial, educational, governmental, aerospace anddefense, utilities, political, and charity, among others. Provides a common focal point for “bridgingthe gap” between and unifying System Users, System Acquirers,multi-discipline System Engineering, and Project, Functional, andExecutive Management education, knowledge, and decision-making fordeveloping systems, products, or services Each chapter provides definitions of key terms,guiding

principles, examples, author’s notes, real-worldexamples, and exercises, which highlight and reinforce key SE&Dconcepts and practices Addresses concepts employed in Model-BasedSystems Engineering (MBSE), Model-Driven Design (MDD), UnifiedModeling Language (UMLTM) / Systems Modeling Language(SysMLTM), and Agile/Spiral/V-Model Development such asuser needs, stories, and use cases analysis; specificationdevelopment; system architecture development; User-Centric SystemDesign (UCSD); interface definition & control; systemintegration & test; and Verification & Validation(V&V) Highlights/introduces a new 21st Century SystemsEngineering & Development (SE&D) paradigm that is easy tounderstand and implement. Provides practices that are critical stagingpoints for technical decision making such as Technical StrategyDevelopment; Life Cycle requirements; Phases, Modes, & States;SE Process; Requirements Derivation; System ArchitectureDevelopment, User-Centric System Design (UCSD); EngineeringStandards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises andnumerous case studies and examples, Systems EngineeringAnalysis, Design, and Development, Second Edition is a primarytextbook for multi-discipline, engineering, system analysis, andproject management undergraduate/graduate level students and avaluable reference for professionals.

Advances in UML and XML-based Software Evolution - Hongji Yang 2005-01-01

"Reports on the recent advances in UML and XML based software evolution in terms of a wider range of techniques and applications"--Provided by publisher.

Software Engineering - Kassem A. Saleh 2009

This book provides the software engineering fundamentals, principles and skills needed to develop and maintain high quality software products. It covers requirements specification, design, implementation, testing and management of software projects. It is aligned with the SWEBOK, Software Engineering Undergraduate Curriculum Guidelines and ACM Joint Task Force Curricula on Computing.

Software Development Patterns and Antipatterns - Capers Jones 2021-08-26

Software development has been a troubling since it first started. There are seven chronic problems that have plagued it from the beginning: Incomplete and ambiguous user requirements that grow by >2% per month. Major cost and schedule overruns for large applications > 35% higher than planned. Low defect removal efficiency (DRE) Cancelled projects that are not completed: > 30% above 10,000 function points. Poor quality and low reliability after the software is delivered: > 5 bugs per FP. Breach of contract litigation against software outsource vendors. Expensive maintenance and enhancement costs after delivery. These are endemic problems for software executives, software engineers and software customers but they are not insurmountable. In Software Development Patterns and Antipatterns, software engineering and metrics pioneer Capers Jones presents technical solutions for all seven. The solutions involve moving from harmful patterns of software development to effective patterns of software development. The first section of the book examines common software development problems that have been observed in many companies and government agencies. The data on the problems comes from consulting studies, breach of contract lawsuits, and the literature on major software failures. This section considers the factors involved with cost overruns, schedule delays, canceled projects, poor quality, and expensive maintenance after deployment. The second section shows patterns that lead to software success. The data comes from actual companies. The section’s first chapter on Corporate Software Risk Reduction in a Fortune 500 company was based on a major telecom company whose CEO was troubled by repeated software failures. The other chapters in this section deal with methods of achieving excellence, as well as measures that can prove excellence to C-level executives, and with continuing excellence through the maintenance cycle as well as for software development.

Software Evolution - Tom Mens 2008-01-25

This book focuses on novel trends in software evolution research and its relations with other emerging disciplines. Mens and Demeyer, both authorities in the field of software evolution, do not restrict themselves to the evolution of source code but also address the evolution of other, equally important software artifacts. This book is the indispensable source for researchers and professionals looking for an introduction and comprehensive overview of the state-of-the-art.

Agile Processes in Software Engineering and Extreme Programming - Claes Wohlin 2012-05-12

This book contains the refereed proceedings of the 13th International Conference on Agile Software Development, XP 2012, held in Malmö, Sweden, in May 2012. In the last decade, we have seen agile and lean software development strongly influence the way software is developed. Agile and lean software development has moved from being a way of working for a number of pioneers to becoming, more or less, the expected way of developing software in industry. The topics covered by the selected full papers include general aspects of agility, agile teams, studies related to the release and maintenance of software, and research on specific practices in agile and lean software development. They are complemented by four short papers capturing additional aspects of agile and lean projects.

Software Architecture in Practice - Len Bass 2003

This is the eagerly-anticipated revision to one of the seminal books in the field of software architecture which clearly defines and explains the topic.

Guide to the Software Engineering Body of Knowledge (Swebok(r)) - IEEE Computer Society 2014

In the Guide to the Software Engineering Body of Knowledge (SWEBOK(R) Guide), the IEEE Computer Society establishes a baseline for the body of knowledge for the field of software engineering, and the work supports the Society's responsibility to promote the advancement of both theory and practice in this field. It should be noted that the Guide does not purport to define the body of knowledge but rather to serve as a compendium and guide to the knowledge that has been developing and evolving over the past four decades. Now in Version 3.0, the Guide's 15 knowledge areas summarize generally accepted topics and list references for detailed information. The editors for Version 3.0 of the SWEBOK(R) Guide are Pierre Bourque (Ecole de technologie superieure (ETS), Universite du Quebec) and Richard E. (Dick) Fairley (Software and Systems Engineering Associates (S2EA)).

Reverse Engineering and Software Maintenance - Kevin Lano 1994

Software Testing and Quality Assurance - Kshirasagar Naik 2011-09-23

A superior primer on software testing and quality assurance, from integration to execution and automation This important new work fills the pressing need for a user-friendly text that aims to provide software engineers, software quality professionals, software developers, and students with the fundamental developments in testing theory and common testing practices. Software Testing and Quality Assurance: Theory and Practice equips readers with a solid understanding of: Practices that support the production of quality software Software testing techniques Life-cycle models for requirements, defects, test cases, and test results Process models for units, integration, system, and acceptance testing How to build test teams, including recruiting and retaining test engineers Quality Models, Capability Maturity Model, Testing Maturity Model, and Test Process Improvement Model Expertly balancing theory with practice, and complemented with an abundance of pedagogical tools, including test questions, examples, teaching suggestions, and chapter summaries, this book is a valuable, self-contained tool for professionals and an ideal introductory text for courses in software testing, quality assurance, and software engineering.

Advances in Software Maintenance Management: Technologies and Solutions - Piattini, Mario 2002-07-01

Advances in Software Maintenance Management: Technologies and Solutions is a compilation of chapters from some of the best researchers and practitioners in the area of software maintenance. The chapters in this book are intended to be useful to a wide audience where software maintenance is a mandatory matter for study.

Software Maintenance - Penny Grubb 2003-07-07

' Software systems now invade every area of daily living. Yet, we still struggle to build systems we can really rely on. If we want to work with software systems at any level, we need to get to grips with the way software evolves. This book will equip the reader with a sound understanding of maintenance and how it affects all levels of the software evolution process. Contents:Part I: The Context of Maintenance:Introduction to the Basic ConceptsThe Maintenance FrameworkFundamentals of Software ChangeLimitations and Economic Implications to Software ChangeThe Maintenance ProcessPart II: What Takes Place During Maintenance:Program UnderstandingReverse EngineeringReuse and ReusabilityTestingManagement and Organisational IssuesPart III: Keeping Track of the Maintenance Process:Configuration ManagementMaintenance MeasuresPart IV: Building Better Systems:Building and Sustaining MaintainabilityMaintenance ToolsPart V: Looking to the Future Readership: Researchers, graduate students and undergraduates in software engineering, programming, information engineering, health informatics and medical informatics; practitioners and industrialists in software development and maintenance. Keywords:Software Maintenance;Software Evolution;Software Change;Program Understanding;Software Reuse;Maintenance Process ModelsReviews:“… an excellent piece of work that comprehensively covers the breadth of software maintenance issues … the strongest praise I can give is that I intend to use it myself, as a reference to aid my research, and as a textbook the next time I teach maintenance.”Journal of Software Maintenance '

Software Evolution and Feedback - Nazim H. Madhavji 2006-08-30

Evolution of software has long been recognized as one of the most problematic and challenging areas in the field of software engineering, as evidenced by the high, often up to 60-80%, life-cycle costs attributed to this activity over the life of a software system. Studies of software evolution are central to the understanding and practice of software development. Yet it has received relatively little attention in the field of software engineering. This book focuses on topics aimed at giving a scientific insight into the aspect of software evolution and feedback. In summary, the book covers conceptual, phenomenological, empirical, technological and theoretical aspects of the field of software evolution - with contributions from the leading experts. This book delivers an up-to-date scientific understanding of what software evolution is, to show why it is inevitable for real world applications, and it demonstrates the role of feedback in software development and maintenance. The book also addresses some of the phenomenological and technological underpinnings and includes rules and guidelines for increased software evolvability and, in general, sustainability of the evolution process. Software Evolution and Feedback provides a long overdue, scientific focus on software evolution and the role of feedback in the software process, making this the indispensable guide for all software practitioners, researchers and managers in the software industry.

Technological Developments in Education and Automation - Magued Iskander 2010-01-30

Technological Developments in Education and Automation includes set of rigorously reviewed world-class manuscripts dealing with the increasing role of technology in daily lives including education and industrial automation Technological Developments in Education and Automation contains papers presented at the International Conference on Industrial Electronics, Technology & Automation and the International Conference on Engineering Education, Instructional Technology, Assessment, and E-learning which were part of the International Joint Conferences on Computer, Information and Systems Sciences and Engineering

Software Quality Assurance - Claude Y. Laporte 2018-01-04

This book introduces Software Quality Assurance (SQA) and provides an overview of standards used to implement SQA. It defines ways to assess the effectiveness of how one approaches software quality across key industry sectors such as telecommunications, transport, defense, and aerospace. Includes supplementary website with an instructor’s guide and solutions Applies IEEE software standards as well as the Capability Maturity Model Integration for Development (CMMI) Illustrates the application of software quality assurance practices through the use of practical examples, quotes from experts, and tips from the authors

Software Engineering Best Practices - Capers Jones 2009-11-05

Proven techniques for software engineering success This in-depth volume examines software engineering topics that are not covered elsewhere: the question of why software engineering has developed more than 2,500 programming languages; problems with traditional definitions of software quality; and problems with common metrics, "lines of code," and "cost per defect" that violate standard economic assumptions. The book notes that a majority of "new" projects are actually replacements for legacy applications, illustrating that data mining for lost requirements should be a standard practice. Difficult social engineering issues are also covered, such as how to minimize harm from layoffs and downsizing. Software Engineering Best Practices explains how to effectively plan, size, schedule, and manage software projects of all types, using solid engineering procedures. It details proven methods, from initial requirements through 20 years of maintenance. Portions of the book have been extensively reviewed by key engineers from top companies, including IBM, Microsoft, Unisys, and Sony. Manage Agile, hierarchical, matrix, and virtual software development teams Optimize software quality using JAD, OFD, TSP, static analysis, inspections, and other methods with proven success records Use high-speed functional metrics to assess productivity and quality levels Plan optimal organization, from small teams through more than 1,000 personnel

Software Evolution and Maintenance - Priyadarshi Tripathy 2014-10-07

Provides students and engineers with the fundamentaldevelopments and common practices of software evolution andmaintenance Software Evolution and Maintenance: A Practitioner’sApproach introduces readers to a set of well-roundededucational materials, covering the fundamental developments insoftware evolution and common maintenance practices in theindustry. Each chapter gives a clear understanding of a particulartopic in software evolution, and discusses the main ideas withdetailed examples. The authors first explain the basic concepts andthen drill deeper into the important aspects of software evolution.While designed as a text in an undergraduate course in softwareevolution and maintenance, the book is also a great resourceforsoftware engineers, information technology professionals, andgraduate students in software engineering. Based on the IEEE SWEBOK (Software Engineering Body ofKnowledge) Explains two maintenance standards: IEEE/EIA 1219 andISO/IEC14764 Discusses several commercial reverse and domain engineeringtoolkits Slides for instructors are available online Software Evolution and Maintenance: APractitioner’s Approach equips readers with a solidunderstanding of the laws of software engineering, evolution andmaintenance models, reengineering techniques, legacy informationsystems, impact analysis, refactoring, program comprehension, andreuse.

Managing Next Generation Networks and Services - Shingo Ata 2007-09-18

This book constitutes the refereed proceedings of the 9th Asia-Pacific Network Operations and Management Symposium, APNOMS 2007, held in Sapporo, Japan, October 2007. The 48 revised full papers and 30 revised short papers cover management of distributed networks, network configuration and planning, network security management, sensor and ad-hoc networks, network monitoring, routing and traffic engineering, management of wireless networks and security on wireless networks.

Software Engineering Design - Carlos Otero 2012-08-23

Taking a learn-by-doing approach, Software Engineering Design: Theory and Practice uses examples, review questions, chapter exercises, and case study assignments to provide students and practitioners with the understanding required to design complex software systems. Explaining the concepts that are immediately relevant to software designers, it begins with a review of software design fundamentals. The text presents a formal top-down design process that consists of several design activities with varied levels of detail, including the macro-, micro-, and construction-design

levels. As part of the top-down approach, it provides in-depth coverage of applied architectural, creational, structural, and behavioral design patterns. For each design issue covered, it includes a step-by-step breakdown of the execution of the design solution, along with an evaluation, discussion, and justification for using that particular solution. The book outlines industry-proven software design practices for leading large-scale software design efforts, developing reusable and high-quality software systems, and producing technical and customer-driven design documentation. It also: Offers one-stop guidance for mastering the Software Design & Construction sections of the official Software Engineering Body of Knowledge (SWEBOK®) Details a collection of standards and guidelines for structuring high-quality code Describes techniques for analyzing and evaluating the quality of software designs Collectively, the text supplies comprehensive coverage of the software design concepts students will need to succeed as professional design leaders. The section on engineering leadership for software designers covers the necessary ethical and leadership skills required of software developers in the public domain. The section on creating software design documents (SDD) familiarizes students with the software design notations, structural descriptions, and behavioral models required for SDDs. Course notes, exercises with answers, online resources, and an instructor’s manual are available upon qualified course adoption. Instructors can contact the author about these resources via the author's website: http://softwareengineeringdesign.com/

Model-Driven Software Development: Integrating Quality Assurance - Rech, J□rg 2008-08-31

Covers important concepts, issues, trends, methodologies, and technologies in quality assurance for model-driven software development.

Measuring Organizational Information Systems Success: New Technologies and Practices - Belkhamza, Zakariya 2012-02-29

"This book explores new approaches which may better effectively identify, explain, and improve IS assessment in organizations"--Provided by publisher.

Software Maintenance - Armstrong A. Takang 1996

Takang and Grubb begin by explaining software maintenance, then analyse the various methods which have been used in industry to date. They counter the traditional view of software maintenance as costly or impossible, by offering practical solutions.

Software Product Quality Control - Stefan Wagner 2013-07-25

Quality is not a fixed or universal property of software; it depends on the context and goals of its stakeholders. Hence, when you want to develop a high-quality software system, the first step must be a clear and precise specification of quality. Yet even if you get it right and complete, you can be sure that it will become invalid over time. So the only solution is continuous quality control: the steady and explicit evaluation of a product’s properties with respect to its updated quality goals. This book guides you in setting up and running continuous quality control in your environment. Starting with a general introduction on the notion of quality, it elaborates what the differences between process and product quality are and provides definitions for quality-related terms often used without the required level of precision. On this basis, the work then discusses quality models as the foundation of quality control, explaining how to plan desired product qualities and how to ensure they are delivered throughout the entire lifecycle. Next it presents the main concepts and techniques of continuous quality control, discussing the quality control loop and its main techniques such as reviews or testing. In addition to sample scenarios in all chapters, the book is rounded out by a dedicated chapter highlighting several applications of different subsets of the presented quality control techniques in an industrial setting. The book is primarily intended for practitioners working in software engineering or quality assurance, who will benefit by learning how to improve their current processes, how to plan for quality, and how to apply state-of-the-art quality control techniques. Students and lecturers in computer science and specializing in software engineering will also profit from this book, which they can use in practice-oriented courses on software quality, software maintenance and quality assurance.

Software Engineering Research, Management and Applications 2011 - Roger Lee 2011-10-15

The purpose of the 9th International Conference on Software Engineering Research, Management and Applications(SERA 2011) held on August 10-12, 2011 in Baltimore, Maryland was to bring together scientists, engineers, computer users, and students to share their experiences and exchange new ideas and research results about all aspects (theory, applications and tools) of computer and information sciences, and to discuss the practical challenges encountered along the way and the solutions adopted to solve them. The conference organizers selected 12 outstanding papers from SERA 2011, all of which you will find in this volume of Springer’s Studies in Computational Intelligence.

Software and Mind - Andrei Sorin 2013-01-01

Addressing general readers as well as software practitioners, "Software and Mind" discusses the fallacies of the mechanistic ideology and the degradation of minds caused by these fallacies. Mechanism holds that every aspect of the world can be represented as a simple hierarchical structure of entities. But, while useful in fields like mathematics and manufacturing, this idea is generally worthless, because most aspects of the world are too complex to be reduced to simple hierarchical structures. Our software-related affairs, in particular, cannot be represented in this fashion. And yet, all programming theories and development systems, and all software applications, attempt to reduce real-world problems to neat hierarchical structures of data, operations, and features. Using Karl Popper's famous principles of demarcation between science and pseudoscience, the book shows that the mechanistic ideology has turned most of our software-related activities into pseudoscientific pursuits. Using mechanism as warrant, the software elites are promoting invalid, even fraudulent, software notions. They force us to depend on generic, inferior systems, instead of allowing us to develop software skills and to create our own systems. Software mechanism emulates the methods of manufacturing, and thereby restricts us to high levels of abstraction and simple, isolated structures. The benefits of software, however, can be attained only if we start with low-level elements and learn to create complex, interacting structures. Software, the book argues, is a non-mechanistic phenomenon. So it is akin to language, not to physical objects. Like language, it permits us to mirror the world in our minds and to communicate with it. Moreover, we increasingly depend on software in everything we do, in the same way that we depend on language. Thus, being restricted to mechanistic software is like thinking and communicating while being restricted to some ready-made sentences supplied by an elite. Ultimately, by impoverishing software, our elites are achieving what the totalitarian elite described by George Orwell in "Nineteen Eighty-Four" achieves by impoverishing language: they are degrading our minds.

Software Maintenance - Penny Grubb 2003

Software systems now invade every area of daily living. Yet, we still struggle to build systems we can really rely on. If we want to work with software systems at any level, we need to get to grips with the way software evolves. This book will equip the reader with a sound understanding of maintenance and how it affects all levels of the software evolution process.

Managing Corporate Information Systems Evolution and Maintenance - Khaled M. Khan 2005-01-01

This book addresses the recent developments in systems maintenance research and practices ranging from technicality of systems evolution to managerial aspects of the topic, including issues such as evolving legacy systems to e-business, applying patterns for reengineering legacy systems to web, architectural recovery of legacy systems, evolving legacy systems into software components.

Practical Software Testing - Ilene Burnstein 2003-06-24

Based on the needs of the educational community, and the software professional, this book takes a unique approach to teaching software testing. It introduces testing concepts that are managerial, technical, and process oriented, using the Testing Maturity Model (TMM) as a guiding framework. The TMM levels and goals support a structured presentation of fundamental and advanced test-related concepts to the reader. In this context, the interrelationships between theoretical, technical, and managerial

concepts become more apparent. In addition, relationships between the testing process, maturity goals, and such key players as managers, testers and client groups are introduced. Topics and features: - Process/engineering-oriented text - Promotes the growth and value of software testing as a profession - Introduces both technical and managerial aspects of testing in a clear and precise style - Uses the TMM framework to introduce testing concepts in a systemmatic, evolutionary way to faciliate understanding - Describes the role of testing tools and measurements, and how to integrate them into the testing process Graduate students and industry professionals will benefit from the book, which is designed for a graduate course in software testing, software quality assurance, or software validation and verification Moreover, the number of universities with graduate courses that cover this material will grow, given the evoluation in software development as an engineering discipline and the creation of degree programs in software engineering.

Software Maintenance Management - Alain April 2012-04-20
This book explores the domain of software maintenance management and provides road maps for improving software maintenance organizations. It describes full maintenance maturity models organized by levels 1, 2, and 3, which allow for benchmarking and continuous improvement paths. Goals for each key practice area are also provided, and the model presented is fully aligned with the architecture and framework of software development maturity models of CMMI and ISO 15504. It is complete with case studies, figures, tables, and graphs.

Outlines and Highlights for Software Maintenance Management - Cram101 Textbook Reviews 2011-05
Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780470147078 .

The Economics of Software Quality - Capers Jones 2012
Poor quality continues to bedevil large-scale development projects, but few software leaders and practitioners know how to measure quality, select quality best practices, or cost-justify their usage. In The Economics of Software Quality, leading software quality experts Capers Jones and Jitendra Subramanyam show how to systematically measure the economic impact of quality and how to use this information to deliver far more business value. Using empirical data from hundreds of software organizations, Jones and Subramanyam show how integrated inspection, static analysis, and testing can achieve defect removal rates exceeding 95 percent. They offer innovative guidance for predicting and measuring defects and quality; choosing defect prevention, pre-test defect removal, and testing methods; and optimizing post-release defect reporting and repair. This book will help you Prove that improved software quality translates into strongly positive ROI and greatly reduced TCO Drive better results from current investments in debugging and prevention Use quality techniques to stay on schedule and on budget Avoid "hazardous" metrics that lead to poor decisions Important note: The audio and video content included with this enhanced eBook can be viewed only using iBooks on an iPad, iPhone, or iPod touch.

Software Testing - Ali Mili 2015-06-15
Explores and identifies the main issues, concepts, principles and evolution of software testing, including software quality engineering and testing concepts, test data generation, test deployment analysis, and software test management This book examines the principles, concepts, and processes that are fundamental to the software testing function. This book is divided into five broad parts. Part I introduces software testing in the broader context of software engineering and explores the qualities that testing aims to achieve or ascertain, as well as the lifecycle of software testing. Part II covers mathematical foundations of software testing, which include software specification, program correctness and verification, concepts of software dependability, and a software testing taxonomy. Part III discusses test data generation, specifically, functional criteria and structural criteria. Test oracle design, test driver design, and test outcome analysis is covered in Part IV. Finally, Part V surveys managerial aspects of software testing, including software metrics, software testing tools, and software product line testing. Presents software testing, not as an isolated technique, but as part of an integrated discipline of software verification and validation Proposes program testing and program correctness verification within the same mathematical model, making it possible to deploy the two techniques in concert, by virtue of the law of diminishing returns Defines the concept of a software fault, and the related concept of relative correctness, and shows how relative correctness can be used to characterize monotonic fault removal Presents the activity of software testing as a goal oriented activity, and explores how the conduct of the test depends on the selected goal Covers all phases of the software testing lifecycle, including test data generation, test oracle design, test driver design, and test outcome analysis Software Testing: Concepts and Operations is a great resource for software quality and software engineering students because it presents them with fundamentals that help them to prepare for their ever evolving discipline.

Guide to the Software Engineering Body of Knowledge - Alain Abran 2004
The purpose of the Guide to the Software Engineering Body of Knowledge is to provide a validated classification of the bounds of the software engineering discipline and topical access that will support this discipline. The Body of Knowledge is subdivided into ten software engineering Knowledge Areas (KA) that differentiate among the various important concepts, allowing readers to find their way quickly to subjects of interest. Upon finding a subject, readers are referred to key papers or book chapters. Emphases on engineering practice lead the Guide toward a strong relationship with the normative literature. The normative literature is validated by consensus formed among practitioners and is concentrated in standards and related documents. The two major standards bodies for software engineering (IEEE Computer Society Software and Systems Engineering Standards Committee and ISO/IEC JTC1/SC7) are represented in the project.

Software Architect’s Handbook - Joseph Ingeno 2018-08-30
A comprehensive guide to exploring software architecture concepts and implementing best practices Key Features Enhance your skills to grow your career as a software architect Design efficient software architectures using patterns and best practices Learn how software architecture relates to an organization as well as software development methodology Book Description The Software Architect’s Handbook is a comprehensive guide to help developers, architects, and senior programmers advance their career in the software architecture domain. This book takes you through all the important concepts, right from design principles to different considerations at various stages of your career in software architecture. The book begins by covering the fundamentals, benefits, and purpose of software architecture. You will discover how software architecture relates to an organization, followed by identifying its significant quality attributes. Once you have covered the basics, you will explore design patterns, best practices, and paradigms for efficient software development. The book discusses which factors you need to consider for performance and security enhancements. You will learn to write documentation for your architectures and make appropriate decisions when considering DevOps. In addition to this, you will explore how to design legacy applications before understanding how to create software architectures that evolve as the market, business requirements, frameworks, tools, and best practices change over time. By the end of this book, you will not only have studied software architecture concepts but also built the soft skills necessary to grow in this field. What you will learn Design software architectures using patterns and best practices Explore the different considerations for designing software architecture Discover what it takes to continuously improve as a software architect Create loosely coupled systems that can support change Understand DevOps and how it affects software architecture Integrate, refactor, and re-architect legacy applications Who this book is for The Software Architect’s Handbook is for you if you are a software architect, chief technical officer (CTO), or senior developer looking to gain a firm grasp of software architecture.