

The Incremental Commitment Spiral Model Principles And Practices For Successful Systems And Software

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The Incremental Commitment Spiral Model Barry Boehm 2014-05-29 "The title makes a huge promise: a way to divide commitment into increments that are both meetable (good news for developers) and meaningful (good news for managers and stakeholders). And the book makes good on that promise." -Tom DeMarco, Principal, The Atlantic Systems Guild, author of Peopleware, Deadline, and Slack "I am seriously impressed with this ICSM book. Besides being conceptually sound, I was amazed by the sheer number of clear and concise characterizations of issues, relationships, and solutions. I wanted to take a yellow highlighter to it until I realized I'd be highlighting most of the book." -Curt Hibbs, Chief Agile Evangelist, Boeing Use the ICSM to Generate and Evolve Your Life-Cycle Process Assets to Best Fit Your Organization's Diverse and Changing Needs Many systems development practitioners find traditional "one-size-fits-all" processes inadequate for the growing complexity, diversity, dynamism, and assurance needs of their products and services. The Incremental Commitment Spiral Model (ICSM) responds with a principle- and risk-based framework for defining and evolving your project and corporate process assets, avoiding pitfalls and disruption, and leveraging opportunities to increase value. This book explains ICSM's framework of decision criteria and principles, and shows how to apply them through relevant examples. It demonstrates ICSM's potential for reducing rework and technical debt, improving maintainability, handling emergent requirements, and raising assurance levels. Its coverage includes What makes a system development successful ICSM's goals, principles, and usage as a process-generation framework Creating and evolving processes to match your risks and opportunities Integrating your current practices and adopting ICSM concepts incrementally, focusing on your greatest needs and opportunities About the Website: Download the evolving ICSM guidelines, subprocesses, templates, tools, white papers, and academic support resources at csse.usc.edu/ICSM.

The Art of Systems Architecting, Third Edition Mark W. Maier 2009-01-06 If engineering is the art and science of technical problem solving, systems architecting happens when you don't yet know what the problem is. The third edition of a highly respected bestseller, *The Art of Systems Architecting* provides in-depth coverage of the least understood part of systems design: moving from a vague concept and limited resources to a satisfactory and feasible system concept and an executable program. The book provides a practical, heuristic approach to the "art" of systems architecting. It provides methods for embracing, and then taming, the growing complexity of modern systems. New in the Third Edition: Five major case studies illustrating successful and unsuccessful practices Information on architecture frameworks as standards for architecture descriptions New methods for integrating business strategy and architecture and the role of architecture as the technical embodiment of strategy Integration of process guidance for organizing and managing architecture projects Updates to the rapidly changing fields of software and systems-of-systems architecture Organization of heuristics around a simple and practical process model A Practical Heuristic Approach to the Art of Systems Architecting Extensively rewritten to reflect the latest developments, the text explains how to create a system from scratch, presenting invention/design rules together with clear explanations of how to use them. The author supplies practical guidelines for avoiding common systematic failures while implementing new mandates. He uses a heuristics-based approach that provides an organized attack on very ill-structured engineering problems. Examining architecture as more than a set of diagrams and documents, but as a set of decisions that either drive a system to success or doom it to failure, the book provide methods for integrating business strategy with technical architectural decision making.

MITRE Systems Engineering Guide 2012-06-05

Software Engineering Economics Barry W. Boehm 1981 Software Engineering Economics is an invaluable guide to determining software costs, applying the fundamental concepts of microeconomics to software engineering, and utilizing economic analysis in software engineering decision making.

Systems Engineering: Principles And Practice Alexander Kossiakoff 2009-11-17 This book is based on class notes for a course in the MS program in Systems Engineering at Johns Hopkins University. The program was a cooperative effort between senior systems engineers from the Johns Hopkins University Applied Physics Laboratory and the Westinghouse Electric Company. The authors were part of the curriculum design team as well as members of the faculty.

BIM Handbook Rafael Sacks 2018-07-03 Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

Spiral Development Barry W. Boehm 2000 Abstract: "Spiral development is a family of software development processes characterized by repeatedly iterating a set of elemental development processes and managing risk so it is actively being reduced. This paper characterizes spiral development by enumerating a few 'invariant' properties that any such process must exhibit. For each, a set of 'variants' is also presented, demonstrating a range of process definitions in the spiral development family. Each invariant excludes one or more 'hazardous spiral look-alike' models, which are also outlined. This report also shows how the spiral model can be used for a more cost-effective incremental commitment of funds, via an analogy of the spiral model to stud poker. An important and relatively recent innovation to the spiral model has been the introduction of anchor point milestones. The latter part of the paper describes and discusses these."

The Essence of Software Daniel Jackson 2021-11-16 A revolutionary concept-based approach to thinking about, designing, and interacting with software As our dependence on technology increases, the design of software matters more than ever before. Why then is so much software flawed? Why hasn't there been a systematic and scalable way to create software that is easy to use, robust, and secure? Examining these issues in depth, *The Essence of Software* introduces a theory of software design that gives new answers to old questions. Daniel Jackson explains that a software system should be viewed as a collection of interacting concepts, breaking the functionality into manageable parts and providing a new framework for thinking about design. Through this radical and original perspective, Jackson lays out a practical and coherent path, accessible to anyone—from strategist and

marketer to UX designer, architect, or programmer—for making software that is empowering, dependable, and a delight to use. Jackson explores every aspect of concepts—what they are and aren't, how to identify them, how to define them, and more—and offers prescriptive principles and practical tips that can be applied cost-effectively in a wide range of domains. He applies these ideas to contemporary software designs, drawing examples from leading software manufacturers such as Adobe, Apple, Dropbox, Facebook, Google, Microsoft, Twitter, and others. Jackson shows how concepts let designers preserve and reuse design knowledge, rather than starting from scratch in every project. An argument against the status quo and a guide to improvement for both working designers and novices to the field, *The Essence of Software* brings a fresh approach to software and its creation.

Lean Software Development Mary Poppendieck 2003-05-08 Lean Software Development: An Agile Toolkit Adapting agile practices to your development organization Uncovering and eradicating waste throughout the software development lifecycle Practical techniques for every development manager, project manager, and technical leader Lean software development: applying agile principles to your organization In Lean Software Development, Mary and Tom Poppendieck identify seven fundamental "lean" principles, adapt them for the world of software development, and show how they can serve as the foundation for agile development approaches that work. Along the way, they introduce 22 "thinking tools" that can help you customize the right agile practices for any environment. Better, cheaper, faster software development. You can have all three—if you adopt the same lean principles that have already revolutionized manufacturing, logistics and product development. Iterating towards excellence: software development as an exercise in discovery Managing uncertainty: "decide as late as possible" by building change into the system. Compressing the value stream: rapid development, feedback, and improvement Empowering teams and individuals without compromising coordination Software with integrity: promoting coherence, usability, fitness, maintainability, and adaptability How to "see the whole"—even when your developers are scattered across multiple locations and contractors Simply put, Lean Software Development helps you refocus development on value, flow, and people—so you can achieve breakthrough quality, savings, speed, and business alignment.

Parallel Agile – faster delivery, fewer defects, lower cost Doug Rosenberg 2020-01-03 From the beginning of software time, people have wondered why it isn't possible to accelerate software projects by simply adding staff. This is sometimes known as the "nine women can't make a baby in one month" problem. The most famous treatise declaring this to be impossible is Fred Brooks' 1975 book *The Mythical Man-Month*, in which he declares that "adding more programmers to a late software project makes it later," and indeed this has proven largely true over the decades. Aided by a domain-driven code generator that quickly creates database and API code, Parallel Agile (PA) achieves significant schedule compression using parallelism: as many developers as necessary can independently and concurrently develop the scenarios from initial prototype through production code. Projects can scale by elastic staffing, rather than by stretching schedules for larger development efforts. Schedule compression with a large team of developers working in parallel is analogous to hardware acceleration of compute problems using parallel CPUs. PA has some similarities with and differences from other Agile approaches. Like most Agile methods, PA "gets to code early" and uses feedback from executable software to drive requirements and design. PA uses technical prototyping as a risk-mitigation strategy, to help sanity-check requirements for feasibility, and to evaluate different technical architectures and technologies. Unlike many Agile methods, PA does not support "design by refactoring," and it doesn't drive designs from unit tests. Instead, PA uses a minimalist UML-based design approach (Agile/ICONIX) that starts out with a domain model to facilitate communication across the development team, and partitions the system along use case boundaries, which enables parallel development. Parallel Agile is fully compatible with the Incremental Commitment Spiral Model (ICSM), which involves concurrent effort of a systems engineering team, a development team, and a test team working alongside the developers. The authors have been researching and refining the PA process for several years on multiple test projects that have involved over 200 developers. The book's example project details the design of one of these test projects, a crowdsourced traffic safety system.

Principles of Software Engineering Management Tom Gilb 1988 This practical guide is designed to assist professionals with the problems involved in developing complex software systems, presenting a set of guidelines and tools to manage the technical and organisational aspects of software engineering projects

Balancing Agility and Discipline Barry W. Boehm 2004 Being a certified bibliophile and a professional geek, I have more shelf space devoted to books on software methods than any reasonable human should possess. *Balancing Agility and Discipline* has a prominent place in that section of my library, because it has helped me sort through the noise and smoke of the current method wars. --From the Foreword by Grady Booch This is an outstanding book on an emotionally complicated topic. I applaud the authors for the care with which they have handled the subject. --From the Foreword by Alistair Cockburn The authors have done a commendable job of identifying five critical factors--personnel, criticality, size, culture, and dynamism--for creating the right balance of flexibility and structure. Their thoughtful analysis will help developers who must sort through the agile-disciplined debate, giving them guidance to create the right mix for their projects. --From the Foreword by Arthur Pyster Agility and discipline: These apparently opposite attributes are, in fact, complementary values in software development. Plan-driven developers must also be agile; nimble developers must also be disciplined. The key to success is finding the right balance between the two, which will vary from project to project according to the circumstances and risks involved. Developers, pulled toward opposite ends by impassioned arguments, ultimately must learn how to give each value its due in their particular situations. Balancing Agility and Discipline sweeps aside the rhetoric, drills down to the operational core concepts, and presents a constructive approach to defining a balanced software development strategy. The authors expose the bureaucracy and stagnation that mark discipline without agility, and liken agility without discipline to unbridled and fruitless enthusiasm. Using a day in the life of two development teams and ground-breaking case studies, they illustrate the differences and similarities between agile and plan-driven methods, and show that the best development strategies have ways to combine both attributes. Their analysis is both objective and grounded, leading finally to clear and practical guidance for all software professionals--showing how to locate the sweet spot on the agility-discipline continuum for any given project. 0321186125B10212003 **Good to Great** Jim Collins 2011-07-19 *The Challenge Built to Last*, the defining management study of the nineties, showed how great companies triumph over time and how long-term sustained performance can be engineered into the DNA of an enterprise from the very beginning. But what about the company that is not born with great DNA? How can good companies, mediocre companies, even bad companies achieve enduring greatness? The Study For years, this question preyed on the mind of Jim Collins. Are there companies that defy gravity and convert long-term mediocrity or worse into long-term superiority? And if so, what are the universal distinguishing characteristics that cause a company to go from good to great? The Standards Using tough benchmarks, Collins and his research team identified a set of elite companies that made the leap to great results and sustained those results for at least fifteen years. How great? After the leap, the good-to-great companies

generated cumulative stock returns that beat the general stock market by an average of seven times in fifteen years, better than twice the results delivered by a composite index of the world's greatest companies, including Coca-Cola, Intel, General Electric, and Merck. The Comparisons The research team contrasted the good-to-great companies with a carefully selected set of comparison companies that failed to make the leap from good to great. What was different? Why did one set of companies become truly great performers while the other set remained only good? Over five years, the team analyzed the histories of all twenty-eight companies in the study. After sifting through mountains of data and thousands of pages of interviews, Collins and his crew discovered the key determinants of greatness -- why some companies make the leap and others don't. The Findings The findings of the Good to Great study will surprise many readers and shed light on virtually every area of management strategy and practice. The findings include: Level 5 Leaders: The research team was shocked to discover the type of leadership required to achieve greatness. The Hedgehog Concept (Simplicity within the Three Circles): To go from good to great requires transcending the curse of competence. A Culture of Discipline: When you combine a culture of discipline with an ethic of entrepreneurship, you get the magical alchemy of great results. Technology Accelerators: Good-to-great companies think differently about the role of technology. The Flywheel and the Doom Loop: Those who launch radical change programs and wrenching restructurings will almost certainly fail to make the leap. "Some of the key concepts discerned in the study," comments Jim Collins, "fly in the face of our modern business culture and will, quite frankly, upset some people." Perhaps, but who can afford to ignore these findings?

Human-System Integration in the System Development Process National Research Council 2007-06-15 In April 1991 BusinessWeek ran a cover story entitled, "Can't Work This Thing, About the Difficulties Many People Have with Consumer Products, such as Cell Phones and VCRs. More than 15 years later, the situation is much the same—but at a very different level of scale. The disconnect between people and technology has had society-wide consequences in the large-scale system accidents from major human error, such as those at Three Mile Island and in Chernobyl. To prevent both the individually annoying and nationally significant consequences, human capabilities and needs must be considered early and throughout system design and development. One challenge for such consideration has been providing the background and data needed for the seamless integration of humans into the design process from various perspectives: human factors engineering, manpower, personnel, training, safety and health, and, in the military, habitability and survivability. This collection of development activities has come to be called human-system integration (HSI). Human-System Integration in the System Development Process reviews in detail more than 20 categories of HSI methods to provide invaluable guidance and information for system designers and developers.

Handbook of Software Engineering Sungdeok Cha 2019-02-11 This handbook provides a unique and in-depth survey of the current state-of-the-art in software engineering, covering its major topics, the conceptual genealogy of each subfield, and discussing future research directions. Subjects include foundational areas of software engineering (e.g. software processes, requirements engineering, software architecture, software testing, formal methods, software maintenance) as well as emerging areas (e.g., self-adaptive systems, software engineering in the cloud, coordination technology). Each chapter includes an introduction to central concepts and principles, a guided tour of seminal papers and key contributions, and promising future research directions. The authors of the individual chapters are all acknowledged experts in their field and include many who have pioneered the techniques and technologies discussed. Readers will find an authoritative and concise review of each subject, and will also learn how software engineering technologies have evolved and are likely to develop in the years to come. This book will be especially useful for researchers who are new to software engineering, and for practitioners seeking to enhance their skills and knowledge.

Fundamentals of Software Engineering Rajib Mall 2004-08
Action Research Jean McNiff 2002-01-22 Since the first edition of this established text was published in 1988, action research has gained ground as a popular method amongst educational researchers, and in particular for practising teachers doing higher-level courses. In this new edition Jean McNiff provides updates on methodological discussions and includes new sections of case study material and information on supporting action research. The book raises issues about how action research is theorised, whether it is seen as a spectator discipline or as a real life practice, and how practitioners position themselves within the debate. It discusses the importance for educators of understanding their own work and showing how their educative influence can lead to the development of good orders in formal and informal learning settings and in the wider community. This second edition comes at a time when, after years of debate over what counts as action research, it is now considered an acceptable and useful part of mainstream research practice.

Performance-Based Project Management Glen Alleman 2014-02-13 Even the most experienced project managers aren't immune to the more common and destructive reasons for project collapses. Poor time and budget performance, failure to deal with complexity, uncontrolled changes in scope . . . they can catch anyone off guard. Performance-Based Project Management can help radically improve your project's success rate, despite these and other obstacles that will try to take it down. Readers will discover how they can increase the probability of project success, detailing a step-by-step plan for avoiding surprises, forecasting performance, identifying risk, and taking corrective action to keep a project a success. Project leaders wishing to stand out among their peers who are continually hampered by these unexpected failures will learn how to: • Assess the business capabilities needed for a project • Plan and schedule the work • Determine the resources required to complete on time and on budget • Identify and manage risks to success • Measure performance in units meaningful to decision makers By connecting mission strategy with project execution, this invaluable resource for project managers in every industry will help bring projects to successful, career-enhancing completion.

Agile Project Management For Dummies Mark C. Layton 2017-09-05 Flex your project management muscle Agile project management is a fast and flexible approach to managing all projects, not just software development. By learning the principles and techniques in this book, you'll be able to create a product roadmap, schedule projects, and prepare for product launches with the ease of Agile software developers. You'll discover how to manage scope, time, and cost, as well as team dynamics, quality, and risk of every project. As mobile and web technologies continue to evolve rapidly, there is added pressure to develop and implement software projects in weeks instead of months—and Agile Project Management For Dummies can help you do just that. Providing a simple, step-by-step guide to Agile project management approaches, tools, and techniques, it shows product and project managers how to complete and implement projects more quickly than ever. Complete projects in weeks instead of months Reduce risk and leverage core benefits for projects Turn Agile theory into practice for all industries Effectively create an Agile environment Get ready to grasp and apply Agile principles for faster, more accurate development.

Mastery George Leonard 1992-02-01 Drawing on Zen philosophy and his expertise in the martial art of aikido, bestselling author George Leonard shows how the process of mastery can help us attain a higher level of excellence and a deeper sense of satisfaction and fulfillment in our daily lives. Whether you're seeking to improve your career or your intimate relationships, increase self-esteem or create harmony within yourself, this inspiring prescriptive guide will help you master anything you choose and achieve success in all areas of your life. In *Mastery*, you'll discover: • The 5 Essential Keys to Mastery • Tools for Mastery • How to Master Your Athletic Potential • The 3 Personality Types That Are Obstacles to Mastery • How to Avoid Pitfalls Along the Path • and more...

Software Testing and Analysis Mauro Pezze 2008 Teaches readers how to test and analyze software to achieve an acceptable level of quality at an acceptable cost Readers will be able to minimize software failures, increase quality, and effectively manage costs Covers techniques that are suitable for near-term application, with sufficient technical background to indicate how and when to apply them Provides balanced coverage of software testing & analysis approaches By incorporating modern topics and strategies, this book will be the standard software-testing textbook

System Engineering Analysis, Design, and Development Charles S. Wasson 2015-11-16 Praise for the first edition: "This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does

so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding." —Philip Allen This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via an integrated set of concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for "bridging the gap" between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services Each chapter provides definitions of key terms, guiding principles, examples, author's notes, real-world examples, and exercises, which highlight and reinforce key SE concepts and practices Addresses concepts employed in Model-Based Systems Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UML/TM) / Systems Modeling Language (SysML/TM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V) Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises and numerous case studies and examples, Systems Engineering Analysis, Design, and Development, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

Beginning Software Engineering Rod Stephens 2015-03-02 A complete introduction to building robust and reliable software Beginning Software Engineering demystifies the software engineering methodologies and techniques that professional developers use to design and build robust, efficient, and consistently reliable software. Free of jargon and assuming no previous programming, development, or management experience, this accessible guide explains important concepts and techniques that can be applied to any programming language. Each chapter ends with exercises that let you test your understanding and help you elaborate on the chapter's main concepts. Everything you need to understand waterfall, Sashimi, agile, RAD, Scrum, Kanban, Extreme Programming, and many other development models is inside! Describes in plain English what software engineering is Explains the roles and responsibilities of team members working on a software engineering project Outlines key phases that any software engineering effort must handle to produce applications that are powerful and dependable Details the most popular software development methodologies and explains the different ways they handle critical development tasks Incorporates exercises that expand upon each chapter's main ideas Includes an extensive glossary of software engineering terms

Object-oriented and Classical Software Engineering Stephen R. Schach 2002 This book is designed for an introductory software engineering course, and gives an excellent introduction to software engineering fundamentals, covering both traditional and object-oriented techniques. Its unique organization and style make it excellent for use in a classroom setting. The underlying software engineering theory is presented in Part 1 and followed up with the more practical life-cycle material in Part 2. In this edition, more practical material has been added to help students understand how to use what they are learning. This has been done through the use of How To boxes and greater implementation detail in the case study. Also, the new edition contains the references to the most current literature and includes an overview of extreme programming. The website in this edition will be more extensive, including Solutions, PowerPoints that incorporate lecture notes, newly developed self-quiz questions, and source code for the term project and case study.

The Incremental Commitment Spiral Model Barry W. Boehm 2014 Many systems development practitioners find traditional "one-size-fits-all" processes inadequate for the growing complexity, diversity, dynamism, and assurance needs of their products and services. The Incremental Commitment Spiral Model (ICSM) responds with a principle- and risk-based framework for defining and evolving your project and corporate process assets. This book explains ICSM's framework of decision criteria and principles, and shows how to apply them through relevant examples.

Software Cost Estimation with COCOMO II Barry W. Boehm 2009 CD-ROM includes: Video introduction -- Book overview -- COCOMO II. 2000 software -- Tutorials -- Adobe Acrobat Reader installation package.

Architecting Systems Hillary Sillitto 2014

The Structuring of Organizations Henry Mintzberg 1979 How do organizations structure themselves? A synthesis of the empirical literature in the field, supported by numerous examples and illustrations, provides images that produce a theory. The author introduces five basic configurations of structure - the simple structure, the machine bureaucracy, the professional bureaucracy, the divisionalized form, and the adhocracy. This book reveals that structure seems to be at the root of many questions about organizations and why they function as they do.

Software Project Management Walker Royce 1998 Software Project Management explains the latest management strategies and techniques in software developments. It covers such issues as keeping the team motivated, cost-justifying strategies, deadlines and budgets.

How Learning Works Susan A. Ambrose 2010-04-16 Praise for How Learning Works "How Learning Works is the perfect title for this excellent book. Drawing upon new research in psychology, education, and cognitive science, the authors have demystified a complex topic into clear explanations of seven powerful learning principles. Full of great ideas and practical suggestions, all based on solid research evidence, this book is essential reading for instructors at all levels who wish to improve their students' learning." —Barbara Gross Davis, assistant vice chancellor for educational development, University of California, Berkeley, and author, *Tools for Teaching* "This book is a must-read for every instructor, new or experienced. Although I have been teaching for almost thirty years, as I read this book I found myself resonating with many of its ideas, and I discovered new ways of thinking about teaching." —Eugenia T. Paulus, professor of chemistry, North Hennepin Community College, and 2008 U.S. Community Colleges Professor of the Year from The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education "Thank you Carnegie Mellon for making accessible what has previously been inaccessible to those of us who are not learning scientists. Your focus on the essence of learning combined with concrete examples of the daily challenges of teaching and clear tactical strategies for faculty to consider is a welcome work. I will recommend this book to all my colleagues." —Catherine M. Casserly, senior partner, The Carnegie Foundation for the Advancement of Teaching "As you read about each of the seven basic learning principles in this book, you will find advice that is grounded in learning theory, based on research evidence, relevant to college teaching, and easy to understand. The authors have extensive knowledge and experience in applying the science of learning to college teaching, and they graciously share it with you in this organized and readable book." —From the Foreword by Richard E. Mayer, professor of psychology, University of California, Santa Barbara; coauthor, *e-Learning and the Science of Instruction*; and author, *Multimedia Learning*

Agile Foundations Peter Measey 2015 "Agile practices transform the way organisations carry out business and respond to change. But to realise success, an agile mindset needs to be adopted throughout an organisation, not just within the IT team. This book is aimed at those working in an agile environment or wanting to understand agile practices. Giving a comprehensive introduction to agile principles and methodologies, it will enable readers to apply core values and principles of agile methods in their organisation. This is the official textbook for the BCS Agile Foundation certificate." --

The Requirements Engineering Handbook Ralph Rowland Young 2004 Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirement's analyst needs to know about establishing customer requirements, this first-of-its-kind book is the perfect desk guide for systems or software development work. The book

enables professionals to identify the real customer requirements for their projects and control changes and additions to these requirements. This unique resource helps practitioners understand the importance of requirements, leverage effective requirements practices, and better utilize resources. The book also explains how to strengthen interpersonal relationships and communications which are major contributors to project effectiveness. Moreover, analysts find clear examples and checklists to help them implement best practices.

Foundations for Designing User-Centered Systems Frank E. Ritter 2014-04-11 Foundations for Designing User-Centered Systems introduces the fundamental human capabilities and characteristics that influence how people use interactive technologies. Organized into four main areas—anthropometrics, behaviour, cognition and social factors—it covers basic research and considers the practical implications of that research on system design. Applying what you learn from this book will help you to design interactive systems that are more usable, more useful and more effective. The authors have deliberately developed Foundations for Designing User-Centered Systems to appeal to system designers and developers, as well as to students who are taking courses in system design and HCI. The book reflects the authors' backgrounds in computer science, cognitive science, psychology and human factors. The material in the book is based on their collective experience which adds up to almost 90 years of working in academia and both with, and within, industry; covering domains that include aviation, consumer Internet, defense, eCommerce, enterprise system design, health care, and industrial process control.

The Incremental Commitment Spiral Model 2014

APPLYING UML & PATTERNS 3RD EDITION Craig Larman 2015 Larman covers how to investigate requirements, create solutions and then translate designs into code, showing developers how to make practical use of the most significant recent developments. A summary of UML notation is included

Software Engineering PRESSMAN 2019-09-09 For almost four decades, *Software Engineering: A Practitioner's Approach* (SEPA) has been the world's leading textbook in software engineering. The ninth edition represents a major restructuring and update of previous editions, solidifying the book's position as the most comprehensive guide to this important subject.

Software Process Improvement Rory O'Connor 2009-08-21 This textbook is intended for SPI (software process improvement) managers and - searchers, quality managers, and experienced project and research managers. The papers constitute the research proceedings of the 16th EuroSPI (European Software Process Improvement, www.eurospi.net) conference held in Alcala (Madrid region), September 2-4, 2009, Spain. Conferences have been held since 1994 in Dublin, 1995 in Vienna (Austria), 1997 in Budapest (Hungary), 1998 in Gothenburg (Sweden), 1999 in Pori (Finland), 2000 in Copenhagen (Denmark), 2001 in Limerick (Ireland), 2002 in Nuremberg (Germany), 2003 in Graz (Austria), 2004 in Trondheim (Norway), 2005 in Budapest (Hungary), 2006 in Joensuu (Finland), 2007 in Potsdam (Germany), 2008 in Dublin (Ireland), and 2009 in Alcala (Spain). EuroSPI established an experience library (library.eurospi.net) which will be continuously extended over the next few years and will be made available to all attendees. EuroSPI also created an umbrella initiative for establishing a European Qualification Network in which different SPINs and national initiatives join mutually beneficial collaborations (ECQA - European Certification and Qualification Association, www.ecqa.org). With a general assembly during October 15-16, 2007 through Euro-SPI partners and networks, in collaboration with the European Union (supported by the EU Leonardo da Vinci Programme) a European certification association has been created (www.eu-certificates.org, www.ecqa.org) for the IT and services sector to offer SPI knowledge and certificates to industry, establishing close knowledge transfer links between research and industry.

Strengthening Forensic Science in the United States National Research Council

2009-07-29 Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

Agile Principles, Patterns, and Practices in C# Robert C. Martin 2006-07-20 With the award-winning book *Agile Software Development: Principles, Patterns, and Practices*, Robert C. Martin helped bring Agile principles to tens of thousands of Java and C++ programmers. Now .NET programmers have a definitive guide to agile methods with this completely updated volume from Robert C. Martin and Micah Martin, *Agile Principles, Patterns, and Practices in C#*. This book presents a series of case studies illustrating the fundamentals of Agile development and Agile design, and moves quickly from UML models to real C# code. The introductory chapters lay out the basics of the agile movement, while the later chapters show proven techniques in action. The book includes many source code examples that are also available for download from the authors' Web site. Readers will come away from this book understanding Agile principles, and the fourteen practices of Extreme Programming Spiking, splitting, velocity, and planning iterations and releases Test-driven development, test-first design, and acceptance testing Refactoring with unit testing Pair programming Agile design and design smells The five types of UML diagrams and how to use them effectively Object-oriented package design and design patterns How to put all of it together for a real-world project Whether you are a C# programmer or a Visual Basic or Java programmer learning C#, a software development manager, or a business analyst, *Agile Principles, Patterns, and Practices in C#* is the first book you should read to understand agile software and how it applies to programming in the .NET Framework.

Semantic Software Design Eben Hewitt 2019-09-25 With this practical book, architects, CTOs, and CIOs will learn a set of patterns for the practice of architecture, including analysis, documentation, and communication. Author Eben Hewitt shows you how to create holistic and thoughtful technology plans, communicate them clearly, lead people toward the vision, and become a great architect or Chief Architect. This book covers each key aspect of architecture comprehensively, including how to incorporate business architecture, information architecture, data architecture, application (software) architecture together to have the best chance for the system's success. Get a practical set of proven architecture practices focused on shipping great products using architecture Learn how architecture works effectively with development teams, management, and product management teams through the value chain Find updated special coverage on machine learning architecture Get usable templates to start incorporating into your teams immediately Incorporate business architecture, information architecture, data architecture, and application (software) architecture together