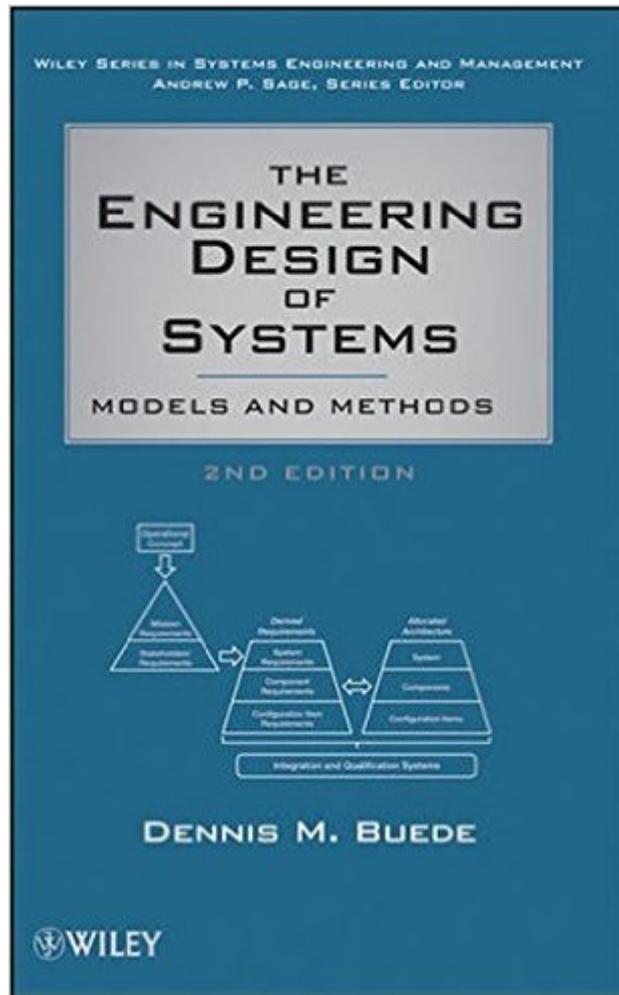# The Engineering Design Of Systems: Models And Methods

Synopsis

The ideal introduction to the engineering design of systemsâ ”now in a new edition The Engineering Design of Systems, Second Edition compiles a wealth of information from diverse sources to provide a unique, one-stop reference to current methods for systems engineering. It takes a model-based approach to key systems engineering design activities and introduces methods and models used in the real world. Features new to this edition include: The addition of Systems Modeling Language (SysML) to several of the chapters, as well as the introduction of new terminology Additional material on partitioning functions and components More descriptive material on usage scenarios based on literature from use case development Updated homework assignments The software product CORE (from Vitech Corporation) is used to generate the traditional SE figures and the software product MagicDraw UML with SysML plugins (from No Magic, Inc.) is used for the SysML figures This book is designed to be an introductory reference and textbook for professionals and students in systems engineering. It is also useful in related courses in engineering programs that emphasize design methods and models.

Book Information

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Customer Reviews

I took a class with Dr. Andrew P. Sage (the editor of this book) at George Mason University focusing on Systems Engineering, where this book is required. I also took a doctoral qualifying exam with this book in the reading list.To start, the first edition of this book did a very amicable job of describing Structured Systems Analysis & Design (SSAD), while this version tried to cram in Object-Oriented

Systems Analysis & Design (OOSAD) in a few of the chapters. IDEF0 (a SSAD diagram) is still used in many of these chapters right along the SysML (OOSAD diagramming) stuff.While SSAD is outdated, the OOSAD material in this book is simply tacked on and not very useful when explained in conjunction with SSAD. Furthermore, it makes both approaches more difficult to understand when presented without a clear divider between the two. This edition is unfortunately an attempt to make an old book relevant for modern systems engineering - a classic "attach a few paragraphs and resell it" scenario.If you need this book for class, I would recommend picking up the cheaper first edition, then getting yourself a good SysML or UML book (A Practical Guide to SysML by Friedenthal is LEAGUES better than this book) which will give you all you need to learn both approaches.

Though there are few text books discussing systems conceptual design, this book is still a horrible read. This was a required book for my master's program and I stopped reading it half way through the semester. There are many typos and the manner in which the book is written makes it difficult to follow. Concepts are presented and discussed in a circular manner, not straight forward which is what one would expect for a teaching book. Definitely will not keep this in my library for reference.

This is easily the worst engineering textbook I've ever had to purchase.The author is long-winded and extremely difficult to follow. He is repetitive and verbose..."a thousand words paint a picture" seems to be his mantra. Much of the discussion seems circular and is otherwise poorly sequenced. There are few examples, and the few that exist are poor. The figures and diagrams do little to improve the text, unfortunately.Lots of definitions are provided...then never used again.There are numerous mistakes throughout the text, which is disappointing for a 2nd edition.Taken together, this is a very difficult read. I frequently found myself asking, "What's the point of this topic?" on more than one chapter...Definitely a book I would not recommend. There must be better alternatives available.

I use this book in my classes for systems engineering and modeling because it gives the necessary overview that higher educated students need in order to understand WHAT they have to do and WHY they have to do it. While many other books simply enumerate tools and methods and then use examples to show how to DO things, you are guided to understand why these tools and methods are needed, and what else is required.In my daily life supporting big companies in their system engineering processes, I often meet students that are great in systems requirement, but they have no idea where to trace them to, and how they are connected to Operational Concepts or

stakeholder needs. I meet people that work out wonderful test plans ... that unfortunately are not connected with the V&V requirements and come up with metrics that are not connected at all to the originating documents. The book is not useful for people that are looking for checklists and recipes. But if you are an engineering management student trying to understand what processes are needed and how they are interconnected by which products and documents, this is the right book.The only real disadvantage is see is the missing link to the IEEE 15288/12207 Life Cycle Processes, which would have been very helpful in painting the big picture.

An average system engineering design book. The book is well structured as a reference book and has great SE tools which can help in the design and development process. The tools can be applied best in determining optimal design referencing well understood specifications which were developed from solid requirements. The book tends to over complicate simple concepts and conversely simplify complex topics.Examples of explained tools are:1. Sequence Diagrams2. Input/Output Diagrams (phase based)3. Trade studies

I bought this text to help study for oral and written exams in a PhD program. I found that this text has good nuggets of information but I've not fully appreciated it as a reference until lately. Initially, when being introduced to SE I found that the text was less useful. Now I turn to it occasionally and each time I do I find a new piece of information that I did not previously understand.This is a good text to help understand an SE process conceptually. It's a bit harder to use it as a practical guide.

The book was hard to follow with its dense and irrelevant writing style (criteria were hard to follow and examples were missing or minimal at best). Buy another systems engineering book! There are plenty of good ones and you cannot do worse than this one.

The Engineering Design of Systems: Models and Methods Lean for Systems Engineering with Lean Enablers for Systems Engineering Genetic Algorithms and Engineering Design (Engineering Design and Automation) Energy Audit of Building Systems: An Engineering Approach, Second Edition (Mechanical and Aerospace Engineering Series) Medical Device Technologies: A Systems Based Overview Using Engineering Standards (Academic Press Series in Biomedical Engineering) Art Models 6: The Female Figure in Shadow and Light (Art Models series) Cut and Make Space Shuttles: 8 Full-Color Models that Fly (Models & Toys) Art Models 7: Dynamic Figures for the Visual Arts (Art Models series) Art Models Ultra: Becca (Art Models series) Art Models 8: Practical Poses

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