

Good Reads About Systems

Recommendations from SERC leadership, researchers, and community

[Systems Engineering for the Digital Age – Practitioner’s Perspectives](#)

Edited by SERC Executive Director Dinesh Verma, this textbook contains chapters by SERC researchers highlighting the impact of the SERC on the state of systems engineering practice and education. Examples include the [Body of Knowledge for Systems Engineering \(SEBoK\)](#) – the most popular systems engineering website in the world with over 50,000 unique visitors every month; GRCSE – the first graduate reference curriculum for systems engineering; the Mission-Aware Security methodology for assessing system architectures for cyber-resilience; and a diversity of research projects to support the transition of digital engineering from strategy into practice including advanced tradespace analysis methods, modeling methods for digital project workflows, digital engineering measurement methods, and digital engineering competencies. Therein lies the focus of this book – translating some of the mature research inspired by the SERC into a compendium of chapters, organized into topical clusters, for the benefit of practicing engineers in industry and government.

[Jon Holt’s Systems Engineering Demystified: Apply modern, model-based systems engineering techniques to build complex systems](#)

Released in 2023, this second edition of Holt’s book discusses model-based systems engineering (MBSE) and its deployment techniques using the Trinity approach. The book explains in great detail different system models and visualization techniques, with a focus on SysML, to help you visualize a system in the design phase. You will also learn various verification and validation techniques to ensure your system design is ready to be implemented. The book also includes management processes and systems engineering best practices and guidelines.

[Bruce Powel Douglass’s Agile Systems Engineering](#)

Douglass incorporates agile methods and model-based systems engineering (MBSE) to define the properties of entire systems while avoiding errors that can occur when using traditional textual specifications. Dr. Douglass covers the lifecycle of systems development, including requirements, analysis, design, and the handoff to specific engineering disciplines. Throughout, Dr. Douglass couples agile methods with SysML and MBSE to arm system engineers with the conceptual and methodological tools they need to avoid specification defects and improve system quality while simultaneously reducing the effort and cost of systems engineering.

General Good Reads

Edward Merrow's and Neeraj Nandurkdikar's [Leading Complex Projects](#)

The book highlights a unique approach to understanding leadership and project management. The role of leadership is to deliver results; in project management, this means taking responsibility for project outcomes. PMs are driven by continuous improvement, and this book provides a wealth of insight to help you achieve the next step forward. For the first time, individual PM characteristics are quantitatively linked to project outcomes through a major study investigating the role of project leadership in the success and failure of complex industrial projects. Hard data on the backgrounds, education, and personality characteristics of over 100 directors of complex projects is analyzed against the backdrop of project performance to provide insight into controllable determinants of outcomes.