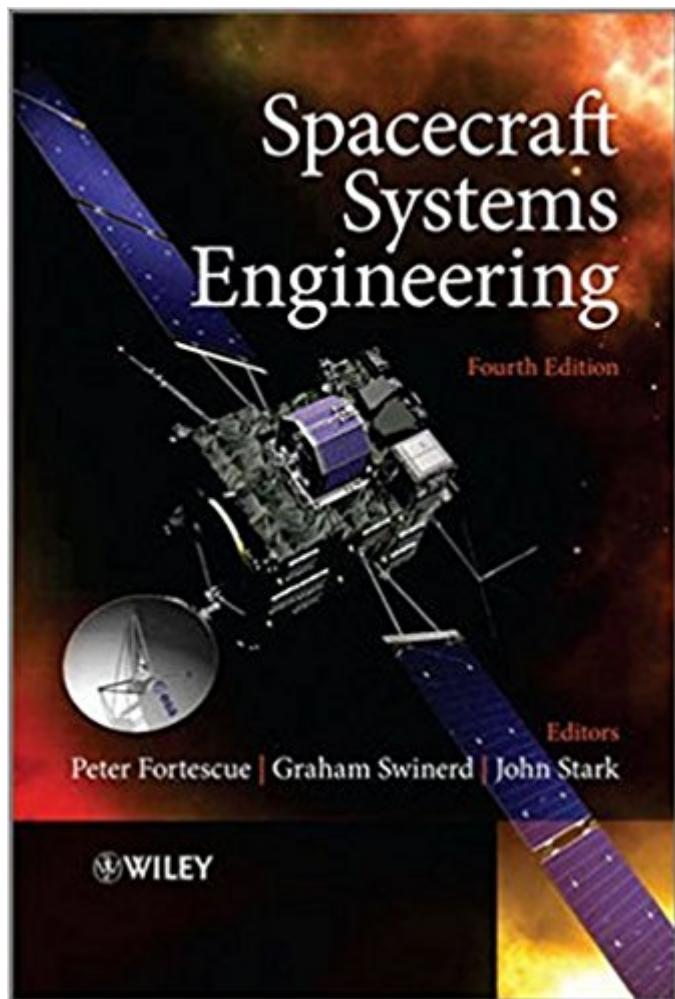


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# Spacecraft Systems Engineering



## Synopsis

This fourth edition of the bestselling Spacecraft Systems Engineering title provides the reader with comprehensive coverage of the design of spacecraft and the implementation of space missions, across a wide spectrum of space applications and space science. The text has been thoroughly revised and updated, with each chapter authored by a recognized expert in the field. Three chapters – Ground Segment, Product Assurance and Spacecraft System Engineering – have been rewritten, and the topic of Assembly, Integration and Verification has been introduced as a new chapter, filling a gap in previous editions. This edition addresses front-end system-level issues such as environment, mission analysis and system engineering, but also progresses to a detailed examination of subsystem elements which represents the core of spacecraft design. This includes mechanical, electrical and thermal aspects, as well as propulsion and control. This quantitative treatment is supplemented by an emphasis on the interactions between elements, which deeply influences the process of spacecraft design. Adopted on courses worldwide, Spacecraft Systems Engineering is already widely respected by students, researchers and practising engineers in the space engineering sector. It provides a valuable resource for practitioners in a wide spectrum of disciplines, including system and subsystem engineers, spacecraft equipment designers, spacecraft operators, space scientists and those involved in related sectors such as space insurance. In summary, this is an outstanding resource for aerospace engineering students, and all those involved in the technical aspects of design and engineering in the space sector.

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## Customer Reviews

Ã¢ "Summing Up: Recommended.Ã  Upper-division undergraduates through professionals/practitioners.Ã¢ (Choice, 1 August 2012) "I highly recommend the fantastic and landmark book *Spacecraft Systems Engineering*, Fourth Edition edited by Peter Fortescue, Graham Swinerd, and John Stark, to any graduate and undergraduate students, engineering and science faculty members, professional engineers, space scientists, business leaders, and government policy makers who are serious about the design, manufacturing, and implementation of complete spacecraft systems. This book provides not only the basics of fully integrated spacecraft systems, but the advanced knowledge required to implement a complete spectrum of space mission applications as well." (Blog Business World, 19 February 2012)

This fourth edition of the bestselling *Spacecraft Systems Engineering* title provides the reader with comprehensive coverage of the design of spacecraft and the implementation of space missions, across a wide spectrum of space applications and space science. The text has been thoroughly revised and updated, with each chapter authored by a recognized expert in the field. Three chapters — Ground Segment, Product Assurance and Spacecraft System Engineering — have been rewritten, and the topic of Assembly, Integration and Verification has been introduced as a new chapter, filling a gap in previous editions. This edition addresses — front-end system-level issues such as environment, mission analysis and system engineering, but also progresses to a detailed examination of subsystem elements which represents the core of spacecraft design. This includes mechanical, electrical and thermal aspects, as well as propulsion and control. This quantitative treatment is supplemented by an emphasis on the interactions between elements, which deeply influences the process of spacecraft design. Adopted on courses worldwide, *Spacecraft Systems Engineering* is already widely respected by students, researchers and practising engineers in the space engineering sector. It provides a valuable resource for practitioners in a wide spectrum of disciplines, including system and subsystem engineers, spacecraft equipment designers, spacecraft operators, space scientists and those involved in related sectors such as space insurance. In summary, this is an outstanding resource for aerospace engineering students, and all those involved in the technical aspects of design and engineering in the space sector.

I am really split about this book. Surely, it has A LOT of content and at an attractive price. It has a lot of details and covers many subtopics. My main issue with it is the poor continuity. Each chapter is written by different authors (well, a few of them, I'd say I've seen at least a dozen names total if not more). There is some repetition, some very basic things are explained several times, which would be fine if they were not just the very basic ones but the more complicated ones to understand. On the other hand, some complex notions are succinctly explained with no diagrams, and sometimes assuming non-trivial prerequisites. Overall, I feel the level of explanation is unbalanced. A whole page may be dedicated to reexplaining something that was extensively covered earlier, while sometimes a gross reference like "see chapter X" (chapters are maybe 40 pages on average) is used when in my opinion it would make sense to redevelop the idea a bit. There is very little numerical applications in my opinion. Many formulas are given, but without proper quantification with real examples. Also, there is very little about on board computers. Don't expect to learn anything about this subject. I think this is a major flaw when you think how critical these systems are today. I would still recommend this book, but definitely not as a sole reading on the subject.

Excellent overview of all subsystems.

An exceptional text! Far reaching and comprehensive. Extremely well written and edited. One of the finer, more informative and interesting reads I have come across in a long time. Well worth the cost and certainly worthy of a second review of many of the topics covered. It has garnered a place on my bookshelf for many years to come. A tip of the hat and kudos to the authors!

As an engineer designing systems for spacecraft I found this book excellent and a really good read. Highly recommended and tons less expensive than most real books on spacecraft design.

Required for a course. Difficult read.

The Spacecraft Systems Engineering, 4th edition, is one of the better books I have read so far on this subject. The strong points are clarity, subject matter coverage, and updated information. All the areas of spacecraft systems engineering are covered at an intermediate level of theory and mathematical formulation. One area that is slightly lacking, and can use more detail is the human space flight vehicle e.g., the NASA Orion spacecraft (renamed as MPCV), otherwise a very good and practical book for a spacecraft systems engineer.

Great book for bachelor level graduates interested in space engineering.

Excellent

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