DESCRIPTION

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.
ABOUT THE AUTHOR

Dr Graham Swinerd is a Reader in Astronautics within the School of Engineering Sciences at the University of Southampton where he teaches courses in aerospace design, spacecraft systems design and astronautics. Prior to joining Southampton in 1987 he was employed by British Aerospace Space Systems, Stevenage. His research interests include orbit dynamics, space mission analysis, spacecraft attitude dynamics and control and space systems engineering.

Professor John Stark joined QMUL as Professor of Aerospace Engineering in 1992. This followed previous appointments at UMIST as a lecturer (1980/83), at Southampton in the Department of Aeronautics and Astronautics (1983/90) as a senior lecturer, and then an executive post at BAe Space Systems Ltd (1990/92). He has served as Head of Department at QMUL from 1992 to 1999, and 2003 to date. He teaches courses in the principles of spacecraft engineering, spacecraft design and space mission engineering, and his areas of expertise include electrospray technology, spacecraft propulsion, spacecraft design and direct printing.

Peter Fortescue retired as a Professor in the Astronautics Group, Department of Engineering Sciences at Southampton University in 1989.

NEW TO EDITION

With emphasis on recent developments in space activities, all chapters have been rewritten with major revisions to the chapters on launch vehicles, structures, ground stations and mechanisms, and a brand new chapter on Assembly, Integration and Test.

FEATURES

• Updated edition of this bestelling & well-established introductory guide to the engineering of spacecraft for students and engineers alike

• Provides balanced and comprehensive coverage of the different and diverse areas of engineering required in the design and implementation of spacecraft and space missions.
• Includes major revisions to the chapters on launch vehicles, structures, ground stations and mechanisms, and a new chapter on Assembly, Integration and Test.

• Unique in its approach that is rooted in and reflects the new developments in European space technology, which continues to mature at a rapid speed.

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