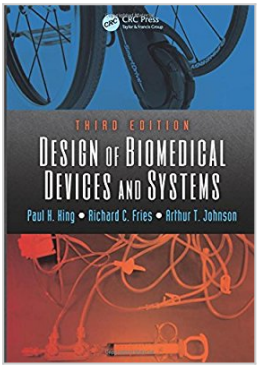

Design of Biomedical Devices and Systems, Third Edition

By Paul H. King, Richard C. Fries, Arthur T. Johnson

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Apply a Wide Variety of Design Processes to a Wide Category of Design Problems

Design of Biomedical Devices and Systems, Third Edition continues to provide a real-world approach to the design of biomedical engineering devices and/or systems. Bringing together information on the design and initiation of design projects from several sources, this edition strongly emphasizes and further clarifies the standards of design procedure. Following the best practices for conducting and completing a design project, it outlines the various steps in the design process in a basic, flexible, and logical order.

What’s New in the Third Edition:

This latest edition contains a new chapter on biological engineering design, a new chapter on the FDA regulations for items other than devices such as drugs, new end-of-chapter problems, new case studies, and a chapter on product development. It adds mathematical modeling tools, and provides new information on FDA regulations and standards, as well as clinical trials and sterilization methods.

- Familiarizes the reader with medical devices, and their design, regulation, and use
- Considers safety aspects of the devices
- Contains an enhanced pedagogy
- Provides an overview of basic design issues

Design of Biomedical Devices and Systems, Third Edition covers the design of biomedical engineering devices and/or systems, and is designed to support bioengineering and biomedical engineering students and novice engineers entering the medical device market.

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Editorial Review

Review

"This book is a comprehensive overview of all the pieces that need to come together to bring a medical device from an idea to an approved device. It is an impressive compilation of information that is not easily found elsewhere, and included extensive references for every chapter. The writing is clear, yet succinct. The book is well organized with labeled subsections that let the reader find exactly what content he/she may want to explore. Each chapter has exercises that can be used as a self-assessment or to supplement a class."
?Anna Iwaniec Hickerson, Keck Graduate Institute of Applied Life Sciences, Claremont, California, USA

"The risk management process section of this text will be very valuable to a capstone design class where teams will likely need to implement strategies to mitigate risks in the development and execution of their design projects. While risk estimation may not be feasible to attempt in an academic design course due to the limited scope and duration, this section offers the reader excellent exposure to analyses such as FMEA that are commonly used in industry."
?Shelly Gulati, University of the Pacific, Stockton, California, USA

About the Author

Paul King, PhD, PE, attended Case Institute of Technology for his BS and MS and then obtained his PhD at Vanderbilt University in 1968 (mechanical engineering.) That same year, he became one of the founding members of the Department of Biomedical Engineering at Vanderbilt University. He developed and taught most of the early required coursework in the Department of Biomedical Engineering. In approximately 2001 he and coauthor Richard Fries published the first edition of the textbook **Design of Biomedical Devices and Systems**. This textbook is being used in multiple universities in the United States and abroad.

Richard Fries, PE, CSQE, CRE, is a licensed professional engineer in the state of Wisconsin and certified by the American Society for Quality as a reliability engineer and a software quality engineer. He has degrees from Loyola University in Chicago and Marquette University in Milwaukee. He is co-inventor of patent 5,682,876, entitled "absorber switch locking device." He has authored eight books and chapters in several others on reliability and regulatory compliance. He has also written numerous articles in professional journals on hardware and software reliability, human factors, standards and regulations, and engineering education.

Arthur T. Johnson attended Cornell University for his undergraduate and graduate degrees. His PhD was awarded in 1969. He joined the faculty of the University of Maryland in 1975 and was professor from 1986 until 2009, when he became professor emeritus. He has written three books: ***Biomechanics and Exercise Physiology***, ***Biological Process Engineering***, and ***Biology for Engineers***. He has been most recently active in teaching electronic design, transport processes, and engineering in biology courses, and in working to continue development of the airflow perturbation device as a noninvasive measurement of respiratory

resistance.

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