



Discussion of the Method: Conducting the Engineer's Approach to Problem Solving (Engineering & Technology)

By Billy Vaughn Koen

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"While the study of the engineering method is important *to create* the world we would have, its study is equally important *to understand* the world we do have."
--Billy V. Koen, Introduction, *Discussion of the Method*

Discussion of the Method outlines the heuristic-based reasoning used by engineers and generalizes it to a universal method for problem-solving. Delving into the connection between engineering and philosophy, this ground-breaking text illustrates how the theoretical and the practical can merge to form real-world solutions. Furthermore, the methodology covered in this innovative book is extremely user-friendly, and easily synthesized with individual approaches to problem-solving. *Discussion of the Method* is an ideal supplement for introductory and advanced courses in engineering, philosophy, and other disciplines, as well as a compelling read for general audiences.

THE METHOD: AN OVERVIEW

- Part I** describes the problem situation that calls for the talents of the engineer and emphasizes how frequently this situation is encountered.
- Part II** defines the heuristic and the engineering method.
- Part III** lists examples of heuristics and techniques used to implement the engineering method, describes several alternative definitions of the engineering method, and renders the method in its final form.
- Part IV** generalizes the engineering method to a universal method.
- Part V** gives a concise, justifiable statement of universal method.
- Part VI** delivers a specific example of the universal method in use.

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Editorial Review

Review

"The best description of engineering that I have ever seen, and one of the most provocative hypotheses about science and nature that I have ever seen!" --Dr. William A. Wulf, President, National Academy of Engineering

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"A profound agglomeration of philosophy, mathematics, eastern mysticism, and very practical engineering." --H. Felix Kloman, *GARP*

About the Author

Billy V. Koen is Professor of Mechanical Engineering at the University of Texas at Austin and a fellow of both the American Nuclear Society (ANS) and the American Society of Engineering Education (ASEE). He has received fifteen awards for teaching excellence, including the W. Leighton Collins Award, (the ASEE's

highest honor for pedagogy), and the ASEE Centennial Medallion for his lasting impact on the field of engineering education. He is a pioneer in the application of artificial intelligence to nuclear reactor reliability and the introduction of self-paced teaching strategies in engineering education. He has written more than 125 technical publications and has contributed to numerous textbooks and engineering journals. Included in his body of work is the classic treatise, "Definition of the Engineering Method," published by the ASEE in 1985.

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