

PREFACE TO FIFTH EDITION

THE FIFTH EDITION of *Engineering Design* continues the reorganization and expansion of topics introduced in the fourth edition. Major reorganization of topics to improve flow of information and increase learning have been made in Chapter 3, Problem and Need Identification; Chapter 6, Concept Generation; and Chapter 7, Decision Making and Concept Selection. A new, progressive example has been introduced and is continued through these three chapters. A new Chapter 10, Design for Sustainability and the Environment, has been added. The book continues its tradition of being more oriented to material selection, design for manufacturing, and design for quality than other broad-based design texts.

The text is intended to be used in either a junior or senior engineering design course with an integrated hands-on design project. At the University of Maryland we present the design process material, Chapters 1 through 9, to junior students in a course introducing the design process. The whole text is used in the senior capstone design course that includes a complete design project, starting from selecting a market to creating a working prototype. Students move quickly through the first nine chapters and emphasize Chapters 10 through 17 in making embodiment design decisions.

The authors hope that students will consider this book to be a valuable part of their professional library. Toward this end we have continued and expanded the practice of giving key literature references and referrals to useful websites. Many new references have been added and all websites have been verified as of June 2011. References to many of the design handbooks and design monographs available at knovel.com have been added to this edition. We have also used the extensive series of *ASM Handbooks* to extend topics in Chapters 11, 12, 13, 14, and 15. These are also available at knovel.com.

New to This Edition

- Reorganization and new material in Chapters 3, 6, and 7, including a progressive example throughout these chapters
- New Chapter 10, Design for Sustainability and the Environment

- Chapter 16, Economic Decision Making, brought into the book from text website
- Section on Cost of Quality added to Chapter 17, Cost Evaluation
- Many additional connections to useful design information on the Internet
- Updated and new references including links to handbooks available through knovel.com
- PowerPoint lecture slides available to instructors through McGraw-Hill Higher Education

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