Managing Engineering and Technology

Seventh Edition
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The seventh edition of Managing Engineering and Technology maintains the focus of prior editions on supporting the growth of engineers into engineering managers, while considering the changing professions of engineering and engineering management. Engineers are talented problem solvers who often lack the training or expertise to solve problems through others. To build that expertise, Managing Engineering and Technology provides readers with the foundations of engineering management in five parts. In Part 1, we introduce the concept of engineering management, its relationship to engineering, and its historical underpinnings. In Part 2, we provide the core of management thought, including the four traditional roles of management—planning, organizing, leading, and controlling—with a particular focus on leadership and how leadership fits into an engineering management context. In addition, we provide tools to understand how human motivation and leadership are used to promote effectively working with and managing technical professionals. In Part 3, we explore both traditional (e.g., managing design) and non-traditional (e.g., managing marketing) roles of the engineering manager when managing technology. In Part 4, we provide an overview of the Project Management process. And in Part 5, we provide tools and discuss key topics needed to be successful in an engineering management career, including an exploration of engineering ethics, tools for career management, and key concepts of the forces changing the worlds of engineering and engineering management, including globalization.

WHAT’S NEW IN THIS EDITION?

This edition welcomes a new author with substantial experience as a practicing engineering manager and engineering management educator. That change brings a number of new and improved content to assist in the development of students’ engineering management skills. The text is updated throughout, with new and revised content in each chapter. Key enhancements include:

- **New vignettes** in each chapter that explore modern developments in the management of engineering and technology with an application or example tied to the material from that chapter. These include discussions of highly successful engineering managers and those with headline grabbing ethical failings.
- **An entirely rewritten Chapter 13 on marketing**, with a focus on the movement toward digital marketing and how an engineering toolset can be used in this data-driven world.
• **Extensive new material in Chapter 16 on ethics**, with new ethical models incorporated that are typically easier for undergraduate students to relate to and utilize.

• **A substantially rewritten Chapter 18**, updated to reflect the current state of globalization and aspects of political unrest around the world.

• **Refreshed and updated content** in each chapter that highlights current trends and topics, such as the many roles of engineering in Amazon, Inc., updated leadership models, and examinations of leadership and management from beyond the Western world. In addition, changes to modernize the language and make it more welcoming and inclusive were made throughout the text. These updates included substantial streamlining of several chapters, reducing the overall text length by 10% while maintaining all key concepts and content.

**FOR THE INSTRUCTOR**

All of these considerable enhancements were made while retaining the same organization and topical flow from the sixth edition to allow for a smoother adoption for instructors. At the same time, this new material has led to considerable changes in the exercises for each chapter. Most chapters have 25%+ new questions from the prior edition. An updated instructor’s guide and chapter slides are available at www.pearson.com/engineering-resources.
Acknowledgments

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