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Nota di contenuto	Chapter 1. Framework and Syllabus: Introduction to Capstone Projects – a Hidden Gem of Engineering Education -- Chapter 2. Project Proposals and Intellectual Properties -- Chapter 3. Teamwork and Group Dynamics -- Design Process and Evolving Phases -- Chapter 5. Phase 1 Process: Problem Definition, Design Specification -- Chapter 6. Phase 2 Process: Concept generation, design and evaluation -- Chapter 7. Phase 3 Process: Detail Design -- Chapter 8. Phase 1 Report: Problem Definition, Design Specification, and Project Plan -- Chapter 9. Phase 2 Report: Conceptual Design -- Chapter 10. Phase 3 Report: Detailed Design -- Chapter 11. Research and Information Resources in Mechanical Engineering Design -- Chapter 12. Industrial Design Elements in Product Development, Part 1: WHAT MAKES A GOOD

INDUSTRIAL DESIGN? -- Chapter 13. Industrial Design Part 2: Cases in Product Development, WHAT MAKES A GOOD PRODUCT DESIGN? -- Chapter 14. Project planning and management -- Chapter 15. How to Write Engineering Report -- Chapter 16. Design Standards and Regulations -- Chapter 17. Accreditation and Graduate Attributes.

Sommario/riassunto

This book offers invaluable insights about the full spectrum of core design course contents systematically and in detail. This book is for instructors and students who are involved in teaching and learning of ‘capstone senior design projects’ in mechanical engineering. It consists of 17 chapters, over 300 illustrations with many real-world student project examples. The main project processes are grouped into three phases, i.e., project scoping and specification, conceptual design, and detail design, and each has dedicated two chapters of process description and report content prescription, respectively. The basic principles and engineering process flow are well applicable for professional development of mechanical design engineers. CAD/CAM/CAE technologies are commonly used within many project examples. Thematic chapters also cover student teamwork organization and evaluation, project management, design standards and regulations, and rubrics of course activity grading. Key criteria of successful course accreditation and graduation attributes are discussed in details. In summary, it is a handy textbook for the capstone design project course in mechanical engineering and an insightful teaching guidebook for engineering design instructors.