

# Project Time And Cost Engineering

This invaluable reference teaches effective and practical techniques to improve the overall performance and outcome of design projects in various industries. Value Engineering highlights the application of value methodology to streamline current day operations, strategic planning in company or business segments, and everyday business decisions in the private sector. The book shows how to maximize budgets, reduce life cycle costs, improve project understanding, and create better working relationships. It explains how to gather information for the creation, evaluation, development, and presentation of new project ideas and shows how to design an appropriate task agenda and timeline.

Project management is the key to any engineering and construction project's success. Now you can learn from the experts real-world tested strategies you can use to lead your projects to on-time, within budget, high quality success stories. Specifics of scheduling, cost estimating and leadership skills are fully detailed. The authors will show you how to organize your project from the very beginning to achieve success. You'll also learn to use win-win negotiation skills during each stage of your project. Real world examples will facilitate your understanding of how to apply every aspect of the material presented in the text. Loaded with

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forms, checklists and case studies, this invaluable reference is a must for everyone involved with engineering and construction projects.

Aiming to bridge the gap between the quantitative viewpoint of management science and the practical, day-to-day needs of project cost management, this text offers coverage of an integrated cost management programme. It presents the use of method study techniques to increase the effectiveness of procedures and improve the productivity of resources, emphasizing a systematic approach to cost control.

This thoroughly rewritten and updated third edition offers comprehensive coverage of cost engineering, emphasizing capital projects and focusing on both estimating and cost control. Maintaining and enhancing the style of presentation that made the previous editions so popular, *Applied Cost Engineering, Third Edition* furnishes an entirely new and co

Appropriate for classes on the management of service, product, and engineering projects, this book encompasses the full range of project management, from origins, philosophy, and methodology to actual applications.

This work outlines a state-of-the-art project control and trending programme, focusing on advanced applied-cost and schedule-control skills for all phases of a project at both owner and contractor level. It contains information on the three

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major aspects of the total project programme: the techniques and procedures utilized for a project; the experience and analytical ability of project personnel; and the commitment and teamwork of a project group.

Providing a sequence of steps for matching cost engineering needs with helpful computer tools, this reference addresses the issues of project complexity and uncertainty; cost estimation, scheduling, and cost control; cost and result uncertainty; engineering and general purpose software; utilities th

The field of chemical engineering is undergoing a global “renaissance,” with new processes, equipment, and sources changing literally every day. It is a dynamic, important area of study and the basis for some of the most lucrative and integral fields of science. Introduction to Chemical Engineering offers a comprehensive overview of the concept, principles and applications of chemical engineering. It explains the distinct chemical engineering knowledge which gave rise to a general-purpose technology and broadest engineering field. The book serves as a conduit between college education and the real-world chemical engineering practice. It answers many questions students and young engineers often ask which include: How is what I studied in the classroom being applied in the industrial setting? What steps do I need to take to become a professional chemical engineer? What are the career diversities in chemical engineering and the engineering knowledge required? How is chemical engineering design done in real-world? What are the chemical engineering computer tools and their applications? What are the prospects, present and future challenges of chemical engineering? And so on. It also provides the information new chemical engineering hires would need to

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excel and cross the critical novice engineer stage of their career. It is expected that this book will enhance students understanding and performance in the field and the development of the profession worldwide. Whether a new-hire engineer or a veteran in the field, this is a must—have volume for any chemical engineer's library.

Cost and Value Management in Projects provides practicing managers with a thorough understanding of the various dimensions of cost and value in projects, along with the factors that impact them, and the managerial approaches that would be most effective for achieving cost efficiency and value optimization. This book addresses cost from a strategic perspective, offering thorough coverage of the various elements of value management such as value planning, value engineering and value analysis from the perspective of projects.

Making the specifics of a complex concern accessible and its handling quite manageable, this fourth edition of the Project and Cost Engineers' Handbook examines the variables associated with international projects and project risk analysis. It provides instruction on contingency planning, delves into ethical considerations, considers the imp

To support the broadening spectrum of project delivery approaches, PMI is offering A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Sixth Edition as a bundle with its latest, the Agile Practice Guide. The PMBOK® Guide – Sixth Edition now contains detailed information about agile; while the Agile Practice Guide, created in partnership with Agile Alliance®, serves as a bridge to connect waterfall and agile. Together they are a powerful tool for project managers. The PMBOK® Guide – Sixth Edition – PMI's flagship publication has been updated to reflect the latest good practices in project management. New to the Sixth Edition, each knowledge area will contain a section entitled Approaches for Agile, Iterative and

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Adaptive Environments, describing how these practices integrate in project settings. It will also contain more emphasis on strategic and business knowledge—including discussion of project management business documents—and information on the PMI Talent Triangle™ and the essential skills for success in today's market. Agile Practice Guide has been developed as a resource to understand, evaluate, and use agile and hybrid agile approaches. This practice guide provides guidance on when, where, and how to apply agile approaches and provides practical tools for practitioners and organizations wanting to increase agility. This practice guide is aligned with other PMI standards, including A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Sixth Edition, and was developed as the result of collaboration between the Project Management Institute and the Agile Alliance.

The role of project sponsor is critical in large projects during the development of the business case, for governance and assurance and as the person who decides that the project should continue or close at any stage. Yet in many organizations the skills of the sponsor are often assumed; he or she will be a senior manager who may well have no practical project experience at all. David West explains the roles and skills that lie at the heart of effective sponsorship. The sponsor acts as a lynch-pin between the Board and the Project Manager, communicating and translating requirements downwards and resource needs, progress and constraints back upwards. An over-zealous sponsor may be tempted to assume some of the project manager's responsibilities, whilst an ineffective sponsor may be invisible, leaving the project manager uninformed by, and unrepresented to, the Board. Project Sponsorship includes exercises, examples and case histories from the real world of projects. It is an essential guide for anyone assuming the important role of managing the business case of the

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project and will help you ensure that the organization is 'doing the right things' as well as 'doing things right'.

This book explains the basic and advanced aspects of engineering economics, cost estimating, cost control, cost forecasting, and planning and scheduling. It is intended for engineers, architects, and managers involved in or planning to be involved in engineering and construction projects.

This practical reference/text provides a thorough overview of cost estimating as applied to various manufacturing industries, with special emphasis on metal manufacturing concerns. It presents examples and study problems illustrating potential applications and the techniques involved in estimating costs.;Containing both US and metric units for easy conversion of world-wide manufacturing data, Estimating and Costing for the Metal Manufacturing Industries: outlines professional societies and publications dealing with cost estimating and cost analysis; details the four basic metalworking processes - machining, casting, forming, and joining; reveals five techniques for capital cost estimating, including the new AACE International's Recommended Practice 16R-90 and the new knowledge and experience method; discusses the effect of scrap rates and operation costs upon unit costs; offers four formula methods for conceptual cost estimating and examines material-design-cost relationships; describes cost indexes, cost capacity factors, multiple-improvement curves, and facility cost estimation techniques; offers a generalized metal cutting economics model for comparison with traditional economic models; and more.;Estimating and Costing for the Metal Manufacturing Industries serves as an on-the-job, single-source reference for cost, manufacturing, and industrial engineers and as a text for upper-level undergraduate, graduate, and postgraduate students in

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cost estimating, engineering economics, and production operations courses.;A Solutions manual to the end-of-chapter problems is available free of charge to instructors only. Requests for the manual must be made on official school stationery.

Probability Methods for Cost Uncertainty Analysis: A Systems Engineering Perspective, Second Edition gives you a thorough grounding in the analytical methods needed for modeling and measuring uncertainty in the cost of engineering systems. This includes the treatment of correlation between the cost of system elements, how to present the analysis to

A Comprehensive Framework for Project Planning in Any Industry! Project Planning Techniques is a comprehensive reference for project managers in any discipline, outlining the latest proven-effective methods based on solid research. Blending practical experience with academic rigor, this authoritative resource will help you develop a deeper understanding of current knowledge and best practice techniques for project success. With practical examples from many industries, Project Planning Techniques gives you a firm understanding of how these methods are applied in real-world situations.

- Get a solid foundation in project planning fundamentals
- Discover the latest indices and models for project selection and prioritization
- Gain an understanding of the schedule network and the project schedule
- Learn processes and techniques for monitoring expenditures during the implementation phase
- Explore the relationship between knowledge management and project management - and how you

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can manage project knowledge by integrating techniques from both systems From start to finish, Project Planning Techniques will help you improve your understanding of project planning — and your performance as a project leader. Bonus CD-ROM: Project Planning Techniques includes a bonus CD-ROM with comprehensive examples from several industries, including WBS, RBS, network diagrams, project estimates, and much more.

The key to successful project control is the fusing of cost to schedule whereby the management of one helps to manage the other. Project Control: Integrating Cost and Schedule in Construction explores the reasons behind and the methodologies for proper planning, monitoring, and controlling both project costs and schedule. Filling a current void the topic of project control applied to the construction industry, it is essential reading for students and professionals alike.

This new edition is a direct response to the ever-growing need for better project management which covers the basics, but also addresses more-technical topics in much greater depth than any other book. Case studies and examples from engineering and technology projects are utilized to prepare technical and business students for management positions in technical fields. It's thorough yet accessible approach makes this text an ideal resource and reference for anyone studying or practicing project management within engineering or business. Includes case studies, examples and background on managing business, engineering, and technology projects to add

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context for specialists and prepare business students for managing projects in technical industry. New edition features closer alignment with PMBOK terms and definitions, simplified chapter summaries, several new case studies throughout, and expanded coverage of communication and leadership issues such as conflict resolution and the management of distributed teams.

Designed as a day-to-day resource for practitioners, and a self-study guide for the AACE International Cost Engineers' certification examination. This third edition has been revised and expanded, and topics covered include project evaluation, project management, and planning and scheduling.

In response to the increasing interest in the growth and developments in the Indian economy, and the dynamic nature of the rapidly changing Indian business environment, this textbook is designed to provide a comprehensive guide to doing business in the Indian context. Written by academic experts in their respective fields, this book is divided into three parts: the Indian business context, conducting business in India, and India and the world. Key information is presented on a wide range of topics, including: Both the shortcomings and opportunities associated with the Indian business environment The economic development model in India Critical skills for negotiation and incentives for foreign investors, including case studies of Italian companies that have entered the Indian market in different ways Business culture in India, including particular customs and etiquette In addition to the pedagogical features, each chapter

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contains a set of key issues, and there is also a list of useful websites covering a wide range of business needs. This book introduces students to business in India, and will be also be of use to investors, organisations and managers who are already doing business, or intend to start one, in India.

Offers coverage of each important step in engineering cost control process, from project justification to life-cycle costs. The book describes cost control systems and shows how to apply the principles of value engineering. It explains estimating methodology and the estimation of engineering, engineering equipment, and construction and labour costs

Parametric cost estimating models are flexible tools which bring engineering, scientific and mathematical rigour to cost and schedule estimating, but great tools alone will not keep programs affordable. Tools must be applied as part of a credible process if estimates and analyses are to be accepted. Complex major projects involving engineering, hardware, software, service and IT, all suffer from two basic problems: the project sponsors often struggle to specify the project effectively, and project managers find themselves wrestling with unpredicted cost or schedule overruns. Everyone wants to be successful with the tools and solutions they use, so this book is a comprehensive collection of methods with proven success. The applications described by Dale Shermon and his co-authors

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have evolved over 30 years of cost engineering experience during which time they have been matured by the parametric community. Each chapter explores a different application of parametrics, based on real-life case examples, providing you with a detailed guide to the rationale and value of cost engineering in a different industry or program context. Systems Cost Engineering will help cost engineers, project and program directors, and the champions that support them, to understand and apply parametrics to ensure that their programs:

- \* offer a credible analysis of alternative cost options
- \* are never initiated with insufficient funding because of inaccurate estimates of cost or quantification of risks
- \* are never diverted from their objective because of a lack of credible cost management
- \* share and communicate knowledge of realistic and dynamic cost and productivity metrics amongst the program team
- \* are never derailed by surprise cost overruns or schedule delays

The information in this book will give projects sponsors and bid managers confidence in the business case that they are developing and enable them to communicate a clear and transparent picture of the risks, opportunities and benefits to stakeholders and project owners. Provides an integrated overview of methods for controlling the cost, schedule and quality of a construction project. It emphasizes project diagnostics and analysis of the patterns of a project and covers estimating, procurement, construction

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management, planning, CPM, claims and data collection. It also covers the major planning, scheduling and estimating software packages from Primavera, G2, Computer Controls Inc., Timberline and others.

This thoroughly rewritten and updated third edition offers comprehensive coverage of cost engineering, emphasizing capital projects and focusing on both estimating and cost control. Maintaining and enhancing the style of presentation that made the previous editions so popular, Applied Cost Engineering, Third Edition furnishes an entirely new and cost-effective approach to estimating and controlling contingency, a new chapter on systems and computer applications, a new chapter on bulk material control, expanded coverage of the factors that affect estimate accuracy, an introduction to the novel concept of estimate and schedule classification, additional end-of-text case studies, and much more.

Environmental engineers work to increase the level of health and happiness in the world by designing, building, and operating processes and systems for water treatment, water pollution control, air pollution control, and solid waste management. These projects compete for resources with projects in medicine, transportation, education, and other fields that have a similar objective. The challenge is to make the investments efficient – to get the best project outputs with a minimum of inputs. Cost Engineering for Pollution Prevention and Control

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examines how to identify the best solution by judging alternatives with respect to some measure of system performance, such as total capital cost, annual cost, annual net profit, return on investment, cost-benefit ratio, net present worth, minimum production time, maximum production rate, minimum energy utilization, and so on. Key Features: Explains how to estimate preliminary costs, how to compare the life cycle costs of alternative projects, how to find the optimal balance between capital costs and operating costs. Emphasis is placed on formulating the problem rather than on the mathematical details of how the calculations are done. Provides numerous practical examples and case studies. Includes end-of-chapter exercises dealing with water, wastewater, air pollution, solid wastes, and remediation projects. The important concepts presented in this book can be understood by those students who have taken an introductory course in environmental engineering. Advanced knowledge of process design is not required. The material can also be utilized by engineers, managers, and others who would benefit from a better understanding of how engineers look at problems.

Covering the life of a construction project from inception to completion, this useful reference explains basic and advanced aspects of engineering economics, cost estimating, cost control, cost forecasting, planning, and scheduling. It serves both

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as a comprehensive introduction to cost engineering and as a practical, on-the-job guide for any construction project where the object is economy. Construction Cost Engineering Handbook describes the responsibilities of each member of the construction team and defines their relationship to project control ... analyzes project economics before, during, and after a project's finish ... examines various types and methods of estimating ... distinguishes between cost reporting and cost forecasting, with valuable cost and scheduling integration examples ... considers planning and scheduling procedures such as the bar chart and sophisticated contemporary techniques ... highlights ways of avoiding common mistakes through data development ... and furnishes computer samples for estimating, cost control, cost forecasting, and scheduling. Illustrated with more than 180 excellent diagrams and drawings, and featuring convenient appendixes on foreign and remote projects, code of accounts and work breakdown structure, and typical project activities, Construction Cost Engineering Handbook is an indispensable reference for civil, cost, project, plant, design, construction, and industrial engineers and managers as well as architects, building contractors, and financial controllers involved with construction projects. Book jacket.

A comprehensive book on project management, covering all principles and methods with fully worked examples, this book includes both hard and soft skills

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for the engineering, manufacturing and construction industries. Ideal for engineering project managers considering obtaining a Project Management Professional (PMP) qualification, this book covers in theory and practice, the complete body of knowledge for both the Project Management Institute (PMI) and the Association of Project Management (APM). Fully aligned with the latest 2005 updates to the exam syllabi, complete with online sample Q&A, and updated to include the latest revision of BS 6079 (British Standards Institute Guide to Project Management in the Construction Industry), this book is a complete and valuable reference for anyone serious about project management. • The complete body of knowledge for project management professionals in the engineering, manufacturing and construction sectors • Covers all hard and soft topics in both theory and practice for the newly revised PMP and APMP qualification exams, along with the latest revision of BS 6079 standard on project management in the construction industry • Written by a qualified PMP exam accreditor and accompanied by online Q&A resources for self-testing

Chemical Engineering Design: Principles, Practice and Economics of Plant and Process Design is one of the best-known and most widely adopted texts available for students of chemical engineering. The text deals with the application of chemical engineering principles to the design of chemical processes and

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equipment. The third edition retains its hallmark features of scope, clarity and practical emphasis, while providing the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards, as well as coverage of the latest aspects of process design, operations, safety, loss prevention, equipment selection, and more. The text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken), and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). Provides students with a text of unmatched relevance for chemical process and plant design courses and for the final year capstone design course Written by practicing design engineers with extensive undergraduate teaching experience Contains more than 100 typical industrial design projects drawn from a diverse range of process industries NEW TO THIS EDITION Includes new content covering food, pharmaceutical and biological processes and commonly used unit operations Provides updates on plant and equipment costs, regulations and technical standards Includes limited online access for students to Cost Engineering's Cleopatra Enterprise cost estimating software In today's hypercompetitive global marketplace, accurate costestimating is crucial to bottom-line results. Nowhere is this moreevident than in the design and development of new products

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and services. Among managing engineers responsible for developing realistic cost estimates for new product designs, the number-one source of information and guidance has been the Cost Estimator's Reference Manual. Comprehensive, authoritative, and practical, the Manual instructs readers in the full range of cost estimating techniques and procedures currently used in the fields of development, testing, manufacturing, production, construction, software, general services, government contracting, engineering services, scientific projects, and proposal preparation. The authors clearly explain how to go about gathering the data essential to preparing a realistic estimate of costs and guide the reader step by step through each procedure. This new Second Edition incorporates a decade of progress in the methods, procedures, and strategies of cost estimating. All the material has been updated and five new chapters have been added to reflect the most recent information on such increasingly important topics as activity-based costing, software estimating, design-to-cost techniques, and cost implications of new concurrent engineering and systems engineering approaches to projects. Indispensable to virtually anyone whose work requires accurate cost estimates, the Cost Estimator's Reference Manual will be especially valuable to engineers, estimators, accountants, and contractors of products, projects, processes, and services to both government and industry. The essential ready-reference for the techniques, methods, and procedures of cost estimating COST ESTIMATOR'S REFERENCE MANUAL Second Edition Indispensable for anyone who depends on accurate cost estimates for engineering projects, the Cost Estimator's Reference Manual guides the user through both the basic and more sophisticated aspects of the estimating process. Authoritative and comprehensive, the Manual seamlessly integrates the many functions--accounting, financial, statistical, and management--of modern

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cost estimating practice. Its broad coverage includes estimating procedures applied to such areas as: \* Production \* Software \* Development \* General services \* Testing \* Government contracting \* Manufacturing \* Engineering \* Proposal preparation \* Scientific projects \* Construction This updated and expanded Second Edition incorporates all the most important recent developments in cost estimating, such as activity-based costing, software estimating, design-to-cost techniques, computer-aided estimating tools, concurrent engineering, and life cycle costing. For engineers, estimators, accountants, planners, and others who are involved in the cost aspects of projects, the Cost Estimator's Reference Manual is an invaluable information source that will pay for itself many times over.

Most project managers would agree that every project is unique. But not all project managers would agree that the best way to manage a unique project is unique. Many still cling to the old practice of having a methodology that is applied to all projects. "One size fits all" is still in common use, and this approach has proven to lead to project failure. Flexibility, situational intelligence, and creativity are essential to deliver project success. The need to recognize and master ever-changing requirements and environmental conditions is a tough challenge for professional project managers. The same practices that led to success yesterday may cause failure today. Selecting favorable responses to a given situation is often the most critical factor of the dynamics of success and failure. This book is designed to help project professionals assess a situation, predict the appropriate approach, methodology and achieving styles, and then apply them in a situational fashion. To guide project managers in selecting the appropriate responses, Situational Project Management (SitPM) shows how to assess a given project, determine its unique characteristics, and select the appropriate methods to complete the

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project. With this book, projects managers can use SitPM to develop profiles of their projects on the basis of the projects' physical characteristics, the project teams' behavioral characteristics, the enterprise environment, and the market environments receiving project deliverables. These profiles help project managers to determine the appropriate project life cycle approach and leadership style. The book also explores various ways to engage stakeholders on the basis of a project's SitPM profile. The book's author, Oliver F. Lehmann, has developed a set of templates to apply SitPM in practice. It can be downloaded from [www.oliverlehmann.com/SitPM/Templates.zip](http://www.oliverlehmann.com/SitPM/Templates.zip).

Mastering Project Time Management, Cost Control, and Quality Management gives managers powerful insights and tools for addressing the "Triple Constraints" that define virtually every project: time, cost, and quality. This book is part of a new series of seven cutting-edge project management guides for both working practitioners and students. Like all books in this series, it offers deep practical insight into the successful design, management, and control of complex modern projects. Using real case studies and proven applications, expert authors show how multiple functions and disciplines can and must be integrated to achieve a successful outcome. Individually, these books focus on realistic, actionable solutions, not theory. Together, they provide comprehensive guidance for working project managers at all levels, including highly-complex enterprise environments. These books also provide indispensable knowledge for anyone pursuing PMI/PMBOK or PRINCE2 certification, or other accreditation in the field. Offshore Projects and Engineering Management delivers a critical training tool for engineers on how to prepare cost estimates and understand the most recent management methods. Specific to the oil and gas offshore industry, the reference dives into project economics, interface

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management and contracts. Methods for analyzing risk, activity calculations and risk response strategies are covered for offshore, FPSO and pipelines. Supported with case studies, detailed discussions, and practical applications, this comprehensive book gives oil and gas managers a management toolbox to extend asset life, reduce costs and minimize impact to personnel and environment. Oil and gas assets are under constant pressure and engineers and managers need engineering management training and strategies to ensure their operations are safe and cost effective. This book helps manage the ramp up to the management of offshore structures. Discusses engineering management for new and existing offshore platforms, including FPSOs and subsea pipelines Presents everything a reader needs to understand the most recent PMP modules and management methods Provides the best tools, tactics and forms through several practical case studies

Improve the accuracy of project estimates and make better in-progress modifications by following the discipline-independent approach mapped out in this book. Learn the best ways to apply new tools, including a breakdown structure for both work and resources and proven estimating models. In addition, you'll gain insights into best practices for progress monitoring and cost management, as well as for dealing effectively with external projects.

Since the publication of the first edition, several Additive Manufacturing technologies have been invented, and many new terminologies have been formalized. Each chapter has been brought up-to-date so that this book continues with its coverage of engineering procedures and the application of modern prototyping technologies, such as Additive Manufacturing (AM) and Virtual Prototyping (VP) that quickly develops new products with lower costs and higher quality. The examples, practice exercises, and case studies have also been updated. Features Gears

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toward rapid product prototyping technologies Presents a wide spectrum of prototyping tools and state-of-the-art additive manufacturing technologies Explains how to use these rapid product prototyping tools in the development of products Includes examples and case studies from the industry Provides exercises in each chapter along with solutions

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