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## 3 Design Phase Em A Manual

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Materials and Process Selection for Engineering Design  
Collage: A Process in Architectural Design  
Design and Technology  
Collaborative and Distributed Chemical Engineering. From Understanding to Substantial Design Process Support  
A New Look  
GCA 2007  
A Collection of Technical Papers  
Proceedings of the 3rd International Workshop on Grid Computing and Applications, Biopolis, Singapore, 5-8, 2007  
Bayesian and Frequentist Adaptive Methods  
The Product Realization Process, Second Edition  
The Design Process  
Ludwig's Applied Process Design for Chemical and Petrochemical Plants  
Product Design for Key Stage 3  
Electromagnetic Alkali Metal Pump Research Program Final Report, 27 Jun. 1963 - 3 Aug. 1964  
EDA for IC Implementation, Circuit Design, and Process Technology  
Technical Reports of the National Highway Traffic Safety Administration  
Process Design Manual for Nitrogen Control  
ELECTROMAGNETIC COMPATIBILITY, A PRACTICAL APPROACH TO  
A Recommended Course of Action for Upgrading Garduda Operations Control Systems  
Reviewing Design Process Theories  
The Holistic 4D Model  
Canadian Essentials of Nursing Research  
Universal Design 2014: Three Days of Creativity and Diversity  
Clinical Trial Design  
On Target for Key Stage 3  
Safe Design and Operation of Process Vents and Emission Control Systems  
Integrated Product and Process Design and Development  
World Design Science Decade: Phase 1 Document 3  
A review of current practice  
AIAA/AHS/IES/SETP/SFTE/DGLE 2nd Flight Testing Conference, November 16-18, 1983, Las Vegas, Nevada  
Materials and Process Selection for Engineering Design, Third Edition  
Business Process Modeling, Simulation and Design, Second Edition  
Business Process Modeling, Simulation and Design  
Functional Thinking for Value Creation  
Understanding by Design  
American Electrician  
WITH AN INTRODUCTION TO CE MARKING  
Results of the IMPROVE Project

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## JAMARI GEMMA

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*Materials and Process Selection for Engineering Design* Estate of R. Buckminster Fuller  
Merging the Instructional Design Process with Learner-Centered Theory brings together the innovations of two previously divided processes — learning design strategies/theories and instructional systems development — into a new introductory textbook. Using a holistic rather than fragmented approach that includes top-level, mid-level, and lower-level design, this book provides guidance for major topics such as non-instructional interventions, just-in-time analysis, rapid-prototype approaches, and learner-centered, project-based, anytime-anywhere instruction. Informed by the authors' considerable experience and leadership throughout dramatic shifts in today's learning landscape, this book offers the next generation of instructional designers a fresh perspective that synthesizes and pushes beyond the basics of design and development.

Collage: A Process in Architectural Design Bloomsbury Publishing USA

A comprehensive source for microwave and wireless circuit design, the *Commercial Wireless Circuits and Components Handbook* reviews the fundamentals of transmitters and receivers, then presents detailed chapters on individual circuit types. It also covers packaging, large and small signal characterization, and high volume testing techniques for both devices and circuits. This handbook not only provides important information for engineers working with wireless RF or microwave circuitry, it also serves as an excellent source for those requiring information outside of their area of expertise, such as managers, marketers, and technical support workers who need a better understanding of the fields driving their decisions.

**Design and Technology** Springer Nature

Karl Aspelund takes readers on a guided tour of seven stages of design, from Inspiration, Identification, Conceptualization, Exploration/Refinement, Definition/Modeling, Communication and Production. "Perspectives" features highlight individual designers and artists, and end-of-chapter exercises help transform design projects to reality. With a thoroughly updated illustrations, the Third Edition of this successful book includes more on sustainability, globalization and collaborative teamwork. Additional Perspectives features provide further inspiration from real-life designers.

Collaborative and Distributed Chemical Engineering. From Understanding to Substantial Design Process Support John Wiley & Sons

Electromagnetic Nondestructive Evaluation (ENDE) is an invaluable tool for assessing the condition of a test object without permanently altering or harming it in any way. It has become an indispensable technique for troubleshooting and research in diverse fields, such as engineering, medicine and art. This book presents one plenary lecture and 41 selected papers from the 19th International Workshop on Electromagnetic Nondestructive Evaluation, held in Xi'an, China, in June 2014. The workshop focused on research into the theory and application of ENDE methods, and provided a forum for the exchange of ideas and discussion of recent developments. The papers are arranged in five sections: material characterization; analytical and numerical modeling; inverse

problems and signal processing; new developments and innovative industrial applications; and advanced sensors in ENDE.

CRC Press

In April 1991 BusinessWeek ran a cover story entitled, "Can't Work This #@! Thing," about the difficulties many people have with consumer products, such as cell phones and VCRs. More than 15 years later, the situation is much the same—but at a very different level of scale. The disconnect between people and technology has had society-wide consequences in the large-scale system accidents from major human error, such as those at Three Mile Island and in Chernobyl. To prevent both the individually annoying and nationally significant consequences, human capabilities and needs must be considered early and throughout system design and development. One challenge for such consideration has been providing the background and data needed for the seamless integration of humans into the design process from various perspectives: human factors engineering, manpower, personnel, training, safety and health, and, in the military, habitability and survivability. This collection of development activities has come to be called human-system integration (HSI). *Human-System Integration in the System Development Process* reviews in detail more than 20 categories of HSI methods to provide invaluable guidance and information for system designers and developers.

A New Look CRC Press

This book explains practical aspects of Electromagnetic Compatibility testing and design without resorting to lengthy mathematical derivations. After reading the book, the designer can immediately incorporate measures like PCB design, filtering, shielding, grounding, cable routing at the design stage of the product development cycle, without worrying too much about theory. This will save both his money and efforts that would be otherwise be required if he tries to modify a frozen design. For the sake of convenience, the book has been divided into two parts. Part I has six chapters dealing with EMC fundamentals, EMC standards and EMC test methodologies. Part II of the book has five chapters dedicated to EMC design methodologies namely filtering, shielding, PCB design, grounding & bonding and cable routing..

And last but not the least, the book ends with an introduction to CE marking - a mandatory compliance mark placed on products intended for export to the European Union.

**GCA 2007** Springer Science & Business Media

The documents in this series originated with a proposal made by R. Buckminster Fuller to the International Union of Architects (I. U. A.) at their VIIth Congress in London, England in July, 1961, launching the World Design Science Decade. He proposed then that the architectural schools around the world be encouraged by the I. U. A. to invest the next ten years in a continuing problem of how to make the total world's resources which [in 1961] serve only 40% serve 100% of humanity through competent design despite a continuing decrease of metal resources per capita. In essence, The World Design Science Decade series of documents suggests, in great detail, ways in which world architectural schools, and specifically their students, should initiate, and assume The Design Science

Decade. The total series includes many of Fuller's most prescient ideas. A note from the series editor, John McHale: "Though the language of some of the texts may seem difficult at first approach, it should be borne in mind that one of our major problems in thinking today [1965] is the use of language systems which still represent a fixed, structurally compartmentalized world view. The terms available to us for the expression of dynamic, rather than static, concepts are far from satisfactory. Fuller's language is particularly representative of the 'transitional state' (of the western world) between the older, traditional, noun-centered culture to its present day, changing, verb-centered culture'. In his search for an adequately descriptive terminology he tends to employ concepts and usages from many different fields juxtaposed in ways which may be unfamiliar to those more customarily restrained within the vocabularies of particular disciplines." Description by the Buckminster Fuller Institute, courtesy of The Estate of R. Buckminster Fuller

**A Collection of Technical Papers** CRC Press

Taking a practical approach, this work illustrates how design, materials, and process selection must mesh together and be considered along with economic and environmental analysis, when developing a new product or changing an existing model. It also considers the trade-offs that must sometimes be made. This second edition adds and revises topics such as environmental, function, and aesthetic considerations in design; environmental impact assessment of materials and processes; life cycle and recycling economics; and materials substitution. The book begins with an intro that reviews stages of product development. This is followed by three sections covering—  
 · Mechanical failures, environmental degradation, and materials that resist different types of failure  
 · Elements of engineering design and the effect of material properties and manufacturing processes on the design of components  
 · Economic and environmental aspects of materials and manufacturing processes, as well as quantitative and computer-assisted methods for screening, ranking alternatives, and deciding on the optimum material/process combination Examples and detailed case studies illustrating practical applications, as well as materials selection and substitution from a variety of industries, are included. Each chapter begins with clear objectives and ends with a summary, review questions, and bibliography. Appendices supply tables of composition and properties and a glossary of technical terms. SI units are used; with Imperial units given when possible. This student-friendly text demonstrates how to balance design, materials, process selection, and economic and environmental analysis to optimize manufacturing processes for a given component. The author maintains a book website which features PowerPoint presentations for each chapter, and access to a solutions manual for qualifying instructors. Professor Faraq's book website

*Proceedings of the 3rd International Workshop on Grid Computing and Applications, Biopolis, Singapore, 5-8, 2007* KIT Scientific Publishing

This book is about using "collage" among Iranian students in architecture studio, and in order to introduce the way these students use the technique to the English reader, we (Ali Yaser Jafari and Reihaneh Khorramrouei) have chosen this valuable book by AliAsghar Adibi to translate from Farsi to English. It provides a representative example of design through collage and culture. This book originally collected and published in three chapters: Collage history in different arts; Objectives and steps to make collage images; Two experienced examples.

**Bayesian and Frequentist Adaptive Methods** National Academies Press

vi The process is important! I learned this lesson the hard way during my previous existence working as a design engineer with PA Consulting Group's Cambridge Technology Centre. One of my earliest assignments involved the development of a piece of laboratory automation equipment for a major European pharmaceutical manufacturer. Two things stick in my mind from those early days – first, that the equipment was always to be ready for delivery in three weeks and, second, that being able to write well structured Pascal was not sufficient to deliver reliable software performance. Delivery was ultimately six months late, the project ran some sixty percent over budget and I gained my first promotion to Senior Engineer. At the time it puzzled me that I had been unable to predict the John Clarkson real effort required to complete the automation project – I had Reader in Engineering Design, genuinely believed that the project would be finished in three Director, Cambridge Engineering weeks. It was some years later that I discovered Kenneth Cooper's Design Centre papers describing the Rework Cycle and realised that I had been the victim of "undiscovered rework". I quickly learned that project plans were not just inaccurate, as most project managers would attest, but often grossly misleading, bearing little resemblance to actual development practice.

**The Product Realization Process, Second Edition** CRC Press

Most textbooks on business process management focus on either the nuts and bolts of computer simulation or the managerial aspects of business processes. Covering both technical and managerial aspects of business process management, Business Process Modeling, Simulation and Design, Second Edition presents the tools to design effective business processes and the management techniques to operate them efficiently. New to the Second Edition Three completely revised chapters that incorporate ExtendSim 8 An introduction to simulation A chapter on business process analytics Developed from the authors' many years of teaching process design and simulation courses, the text provides students with a thorough understanding of numerous analytical tools that can be used to model, analyze, design, manage, and improve business processes. It covers a wide range of approaches, including discrete event simulation, graphical flowcharting tools, deterministic models for cycle time analysis and capacity decisions, analytical queuing methods, and data mining. Unlike other operations management books, this one emphasizes user-friendly simulation software as well as business processes, rather than only manufacturing processes or general operations management problems. Taking an analytical modeling approach to process design, this book illustrates the power of simulation modeling as a vehicle for analyzing and designing business processes. It teaches how to apply process simulation and discusses the managerial implications of redesigning processes. The ExtendSim software is available online and ancillaries are available for instructors.

**The Design Process** Springer

Introduction: The purpose of this document is to construct a recommended course of action in the next year for Garuda Operations Control in its efforts to upgrade its information systems technology. The process of installing new technologies is not one that can be done quickly or easily. It is also not one that can be accomplished by simply purchasing new software, even if that software were to exist. Rather, the process of upgrading technologies must follow a carefully planned and designed path. Among information systems specialists, the process is often referred to as the Systems

Development Life Cycle (SDLC). The scope of an SDLC can vary. For airline operations control projects, the scope of the SDLC process is large. It involves many people, both internal and external to the organization. It requires the establishment of a Systems Development Team with membership from several units of the airline to direct the project and to resolve problems. It (ultimately) involves a substantial resource commitment, typically on the order of \$2,000,000 to \$3,000,000 in development funding. It involves a number of tasks that need to be performed as part of the development effort. And the project typically takes a number of years to implement. Failing to follow a proper Systems Development process may lead to a number of risks, such as:

- e The new system may not meet the user's needs.
- e The acquisition of unnecessary or inappropriate hardware.
- e The acquisition of insufficient software, or software that does not allow the airline to grow or handle future expansion.
- e Software that may be inadequately tested and may not meet requirements or expectations.

One way to look at systems development is to divide it into six phases: Phase 1 - Analyze the current system Phase 2 - Define new system requirements Phase 3 - Design the new system Phase 4 - Develop the new system Phase 5 - Implement the new system Phase 6 - Test and evaluate the system's performance and its ability to meet the user's requirements During the last year, MIT/FTL staff have been working on Phase 1. The results of our analysis of GA's current system have been documented in a separate report by Michael Clarke and Yudi Naryadi entitled "The Airline Operation Control Centre: An Overview of Garuda's Operation Control (EM) at Cengkering", which was recently submitted to GA. Perhaps more work needs to be done in Phase 1 by GA internal staff after GA has reviewed our report. For example, it might be wise to:

- a) Evaluate the sources of all data needed to support operations control.
- b) Document the flows of these data as EM goes about solving various operations problems, or resolving irregular operations.
- c) Document the information needs which are not currently available.
- d) Review current EM policies and procedures to obtain suggestions for improvement.

However, it is the next two phases in the SDLC process (Phase 2 - defining the new system requirements, and Phase 3 - designing the new system) for which we now need to turn our attention. Within the next year of the cooperation between MIT and GA, there are a number of tasks that can be accomplished to complete these next two phases. What follows is our suggestion for what should be accomplished within the next year.

2. Suggested steps for the next year of cooperation between MIT and GA Operations Control

Step 1 - Establish a Systems Development Team. The very first step that should be taken is the establishment of a team of individuals from both within GA and external to GA. The mission of this team would be to oversee the development effort: direct all activities; approve all decisions; make recommendations on the design of the new system; and resolve problems that occur along the way. The team should consist of personnel from:

- e Operations (EP, EM)
- e Flight Dispatch, Navigation (EA, ON)
- e Operations Control Center (OCC)
- e Maintenance (MCC, MP)
- \* Crew Planning (OB)
- e Airport Operations (KO)
- e Information Systems (DX)

The team should have a leader from within GA, and MIT/FTL staff would act as "consultants" to this team.

Step 2 - Complete Phase 2 of the System Development Life Cycle. In the second phase of the SDLC, we need to scope out the requirements for the new system in enough detail so that both the computer systems developers and the users know exactly what the new system is going to do and how the system is going to do it. Needless to say, these requirements should solve the problems identified in Phase 1. The requirements should identify the user's needs

(what the system will do) as well as the hardware, software, and data needs. This phase concludes with a system requirements report.

Step 3 - Configure and install the computer hardware and networking technology that is necessary to allow personnel to electronically communicate and interact with one another, make good use of existing Operations Control systems, and to establish reliable access to all necessary information/data. The design of the hardware and network configuration is not a trivial task. Questions need to be answered:

- e What would be the underlying operating system: UNIX, Windows NT?
- e What hardware will the system run on: 80486 PC's or UNIX Workstations?
- e What client - server architecture is optimum?
- e What local area network is best: Ethernet, Token-Ring?
- \* What media: Twisted-Pair, Co-ax?
- e How is the network to be connected to the mainframe and other systems?
- e What communications and network software is needed?

It is planned that the installation of this hardware and software will be incremental and evolutionary. GA can initially procure just a few workstations and connect them up on a local area network. This "test cell" of computers will allow GA to gain some experience with the new hardware before making a more substantial commitment of resources. In addition, this step will allow EM personnel to become familiar with the new computer hardware before the application software is designed and installed. It will also allow EM personnel to communicate with each other through a local area network. In addition, the hardware and operating system software that is chosen should allow EM to continue to access and use current systems, even if those systems are on the mainframe computer or other workstations. At the same time, it should allow an evolutionary transition to better systems and software.

Step 4 - Begin installation of a centralized Database Management System to hold the data items that are needed for effective Operations Control. Refer to the earlier proposal entitled "System Operations Control Database Development" written by Dennis Mathaisel in July 1995 for a more detailed discussion of this step. Configuring and installing an effective DBMS is not trivial. It is intended that an improved DBMS will be available on-line at EP/EM by transferring and updating data currently in other systems.

Step 5 - Complete Phase 3 of the System Development Life Cycle. This third phase focuses on the design of the new system software before the software is procured or developed. The phase involves two main objectives:

- e To optimally design the new system.
- e To establish a sound framework of controls within which the new system should operate (basically, meeting the requirements).

The completion of the design phase is marked by a couple of events: the team completes, organizes, and assembles the system design documentation; and a series of meetings/presentations are organized to present and review the design proposal. From an overall perspective, next year would be devoted to a year of assessment and design, combined with the installation of necessary hardware, operating systems, and local area networks. It would require a commitment from Garuda to purchase necessary hardware and LAN technology, as well as taking the first steps necessary to install a centralized DBMS.

3. Beyond next year... Once the above steps were completed, then GA can begin to acquire more advanced software to assist in planning and execution of Operations activities. The greatest mistake would be to acquire existing software packages before a thorough study and design was completed. A complete plan for developing a new operational system must be established first. Beyond next year, the basic steps would be as follows:

- a) Complete the construction of the centralized DBMS.
- b) Replace the ROC system currently in use in Operations Control with advanced computer-graphics displays on high-powered workstations that

are connected on a local area network and connected with the mainframe computer. This step involves a transition to UNIX-based software. c) Then, and only after the above steps were taken, consider the introduction of automated decision-support models to solve specific problems that are encountered in irregular operations, etc.

Ludwig's Applied Process Design for Chemical and Petrochemical Plants Pearson Education India  
After the IPS2 conferences in Cranfield and Linköping in 2009 and 2010 the 3rd CIRP International Conference on Industrial Product Service Systems (IPS2) 2011 takes place in Braunschweig, Germany. IPS2 itself is defined as "an integrated industrial product and service offering that delivers value in use". The customers expect comprehensive solutions, which are adapted to their individual needs. IPS2 offers the possibility to stand out from competition and for long-term customer loyalty. Particularly in times of economic crisis it becomes apparent which producing companies understand to satisfy the needs and requirements of their customers. Especially in this relatively new domain IPS2 it will be important to keep track of the whole context and to seek cooperation with other research fields and disciplines. The 3rd CIRP International Conference on Industrial Product Service Systems (IPS2) 2011 serves as a platform for such collaborations and the discussion of new scientific ideas.

*Product Design for Key Stage 3* Nelson Thornes

This book is a compilation of the various recently developed techniques emphasizing better chemical processes and products, with state-of-the-art contributions by world-renowned leaders in process design and optimization. It covers various areas such as grass-root design, retrofitting, continuous, batch, energy, separation, and pollution prevention, striking a balance between fundamental techniques and applications. A large section of this book focuses on industrial applications and will serve as a good compilation of recent industrial experiences for which the process design and optimization techniques were practised. Industrial practitioners will find this book useful as a guide to practice the various techniques in their respective plants and processes. The book is accompanied by some electronic supplements (i.e., models and programs) for selected chapters.

*Electromagnetic Alkali Metal Pump Research Program Final Report, 27 Jun. 1963 - 3 Aug. 1964*  
Springer Science & Business Media

Introducing a new engineering product or changing an existing model involves making designs, reaching economic decisions, selecting materials, choosing manufacturing processes, and assessing its environmental impact. These activities are interdependent and should not be performed in isolation from each other. This is because the materials and processes used in making the product can have a large influence on its design, cost, and performance in service. Since the publication of the second edition of this book, changes have occurred in the fields of materials and manufacturing. Industries now place more emphasis on manufacturing products and goods locally, rather than outsourcing. Nanostructured and smart materials appear more frequently in products, composites are used in designing essential parts of civilian airliners, and biodegradable materials are increasingly used instead of traditional plastics. More emphasis is now placed on how products affect the environment, and society is willing to accept more expensive but eco-friendly goods. In addition, there has been a change in the emphasis and the way the subjects of materials and manufacturing

are taught within a variety of curricula and courses in higher education. This third edition of the bestselling *Materials and Process Selection for Engineering Design* has been comprehensively revised and reorganized to reflect these changes. In addition, the presentation has been enhanced and the book includes more real-world case studies.

*EDA for IC Implementation, Circuit Design, and Process Technology* Lippincott Williams & Wilkins  
The aim of the CEEMAS conference series is to provide a biennial forum for the presentation of multi-agent research and development results. With its particular geographical orientation towards Central and Eastern Europe, CEEMAS has become an internationally recognised event with participants from all over the world. After the successful CEEMAS conferences in St. Petersburg (1999), Cracow (2001) and Prague (2003), the 2005 CEEMAS conference takes place in Budapest. The programme committee of the conference series consists of established researchers from the region and renowned international colleagues, sharing the prominent rank of CEEMAS among the leading events in multi-agent systems. In the very competitive field of agent oriented conferences and workshops nowadays (such as AAMAS, WI/IAT, EUMAS, CIA, MATES) the special profile of CEEMAS is that it is trying to bridge the gap between applied research achievements and theoretical research activities. Our ambition is to provide a forum for presenting theoretical research with an evident application potential, implemented application prototypes and their properties, as well as industrial case studies of successful (but also unsuccessful) agent technology deployments. This is why the CEEMAS proceedings volume provides a collection of research and application papers. The technical research paper section of the proceedings (see pages 11-499) contains pure research papers as well as research results in application settings while the application papers section (see pages 500-530) contains papers focused on application aspects. The goal is to demonstrate the real life value and commercial reality of multi-agent systems as well as to foster communication between academia and industry in this field.

Technical Reports of the National Highway Traffic Safety Administration Nelson Thornes

"Completely revised With timely content and state-of-the-art research undertaken by Canadian nurse researchers, the Third Edition of this trusted resource provides the guidance you need to effectively critique every aspect of nursing research and apply the results to clinical practice. Canadian Essentials of Nursing Research uses clear, straightforward language and a "user-friendly" presentation to help you understand, retain, and apply fundamental concepts with ease." --Book Jacket.

Process Design Manual for Nitrogen Control John Wiley & Sons

Universal Design, Design for All and Inclusive Design are all aimed at dismantling physical and social barriers to inclusion in all areas of life. Engagement in universal design is on the increase worldwide as practitioners and researchers explore creative and desirable solutions to shape the future of universal design products and practices. This book is a collection of the papers presented at UD2014, the International Conference on Universal Design, held in Lund, Sweden, in June 2014. The conference offered a creative and diverse meeting place for all participants to exchange knowledge, experiences and ideas, and to build global connections and creative networks for future work on universal design. The themes of UD2014 span many aspects of societal life, and the papers included here cover areas as diverse as architecture, public transport, educational and play environments,

housing, universal workspaces, and the Internet of things, as well as designs and adaptations for assistive technology. The book clearly demonstrates the breadth of universal design and its ongoing adoption in societies all over the world, and will be of interest to anyone whose work involves building a more inclusive environment for all.

ELECTROMAGNETIC COMPATIBILITY, A PRACTICAL APPROACH TO CRC Press

This book can be first considered as a complete synthesis of the EcCoGen ANR project (2011-2012), involving researchers from different French labs (including MAP) and domains, breaking major difficulties of the real-time generative design in the early stages of a pre-architectural project. Then the scope becomes larger, and the authors introduce major prospects following recent advances on natural and artificial evolution.

A Recommended Course of Action for Upgrading Garduda Operations Control Systems CRC Press

Since the publication of the first edition of *Integrated Product and Process Design and Development: The Product Realization Process* more than a decade ago, the product realization process has undergone a number of significant changes. Reflecting these advances, this second edition presents

a thorough treatment of the modern tools used in the integrated product realization process and places the product realization process in its new context. See what's new in the Second Edition: Bio-inspired concept generation and TRIZ Computing manufacturing cost, costs of ownership, and life-cycle costs of products Engineered plastics, ceramics, composites, and smart materials Role of innovation New manufacturing methods: in-mold assembly and layered manufacturing This book discusses how to translate customer needs into product requirements and specifications. It then provides methods to determine a product's total costs, including cost of ownership, and covers how to generate and evaluate product concepts. The authors examine methods for turning product concepts into actual products by considering development steps such as materials and manufacturing processes selection, assembly methods, environmental aspects, reliability, and aesthetics, to name a few. They also introduce the design of experiments and the six sigma philosophy as means of attaining quality. To be globally viable, corporations need to produce innovative, visually appealing, quality products within shorter development times. Filled with checklists, guidelines, strategies, and examples, this book provides proven methods for creating competitively priced quality products.