

eGrade Plus

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Based on the Activities You Do Every Day

The screenshot shows the Edugen eGrade Plus interface in a Microsoft Internet Explorer browser. The address bar displays a local intranet URL. The page header includes 'Wiley Accounting' and 'TES class'. A navigation menu contains 'Course Administration', 'Prepare/Present', 'Study/Practice', 'Assignment', and 'Gradebook'. Below the menu is an 'Assignment List' table with columns for 'Type', 'Creation date', 'Created by', and 'Chapters'. The table lists several assignments, including 'Chapter 1 Default Assignment' and 'Chapter 10 Default Assignment'. Red callout boxes with arrows point to specific features: 'Administer Your Course' points to the 'Assignment' menu; 'Enhance the Power of Your Class Preparation and Presentations' points to the 'Prepare/Present' menu; 'Assess Student Understanding More Closely and Analyze Results with Our Automatic Gradebook' points to the 'Gradebook' menu; 'Create Your Own Assignments or Use Ours, All with Automatic Grading' points to the 'Assignment List' table; and 'Help Your Students Study More Effectively and Get Immediate Feedback' points to the 'Study/Practice' menu.

Type	Creation date	Created by	Chapters
Questions/Exercises	06.22.2003	default	1
Questions/Exercises	07.04.2003	default	10
Questions/Exercises	07.04.2003	default	11
Questions/Exercises	07.04.2003	default	12
Questions/Exercises	07.04.2003	default	13
Questions/Exercises	07.04.2003	default	14
Questions/Exercises	07.04.2003	default	15
Questions/Exercises	07.04.2003	default	16
Questions/Exercises	07.04.2003	default	17
Questions/Exercises	07.04.2003	default	18
Questions/Exercises	07.04.2003	default	19
Questions/Exercises	07.04.2003	default	20

Administer Your Course

Assess Student Understanding More Closely and Analyze Results with Our Automatic Gradebook

Enhance the Power of Your Class Preparation and Presentations

Create Your Own Assignments or Use Ours, All with Automatic Grading

Help Your Students Study More Effectively and Get Immediate Feedback

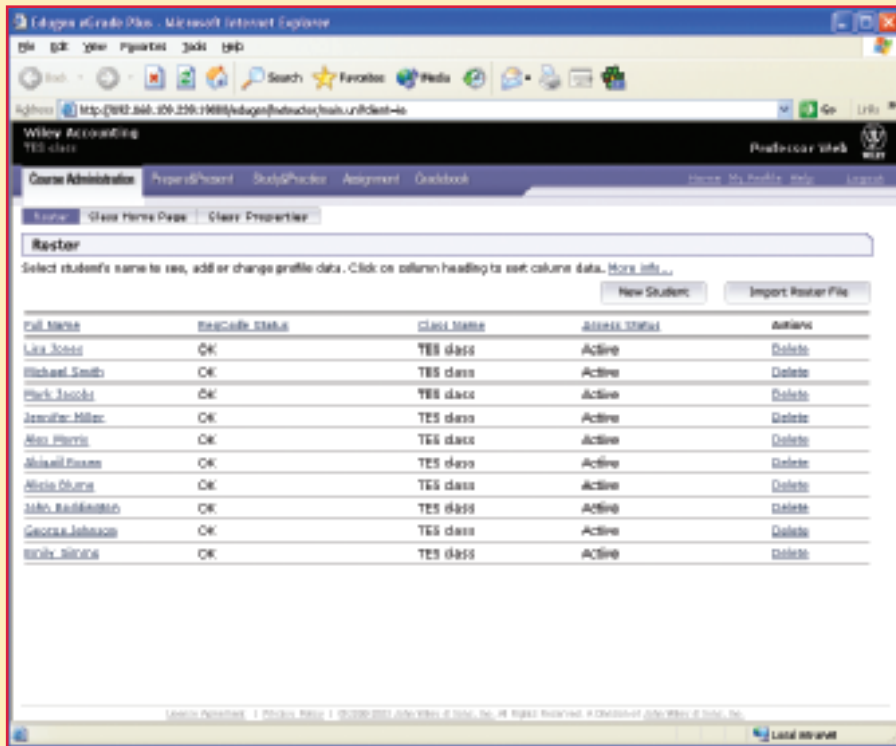
All the content and tools you need, all in one location, in an easy-to-use browser format.

Choose the resources you need, or rely on the arrangement supplied by us.

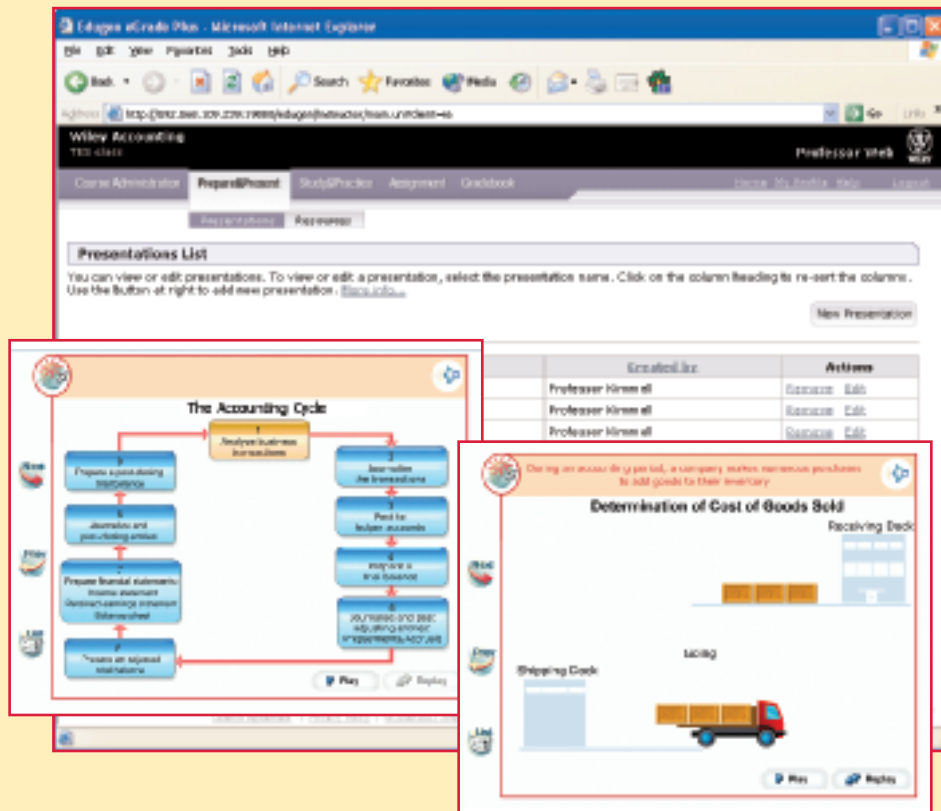
Now, many of Wiley's Book Companion Sites are available with EduGen, allowing you to create your own teaching and learning environment. Upon adoption of EduGen, you can begin to customize your course with the resources shown here. eGrade Plus with EduGen integrates text and media and keeps all of a book's online resources in one easily accessible location. eGrade Plus integrates two resources: homework problems for students and a multimedia version of this Wiley text. With eGrade Plus, each problem is linked to the relevant section of the multimedia book.

Administer Your Course

Course Administration tools allow you to manage your class and integrate your Wiley website resources with most Course Management Systems, allowing you to keep all of your class materials in one location.



Enhance the Power of Your Class Preparation and Presentations



A “**Prepare and Present**” tool contains all of the Wiley-provided resources, such as a **multimedia version of the text, interactive chapter reviews, web-based tutorials, videos, and PowerPoint slides**, making your preparation time more efficient. You may easily adapt, customize, and add to Wiley content to meet the needs of your course.

Create Your Own Assignments or Use Ours, All with Automatic Grading

An “Assignment” area allows you to create **student homework** and **quizzes** that utilize **Wiley-provided question banks**, and an **electronic version of the text**. One of the most powerful features of Wiley’s premium websites is that student assignments will be automatically graded and recorded in your gradebook. This will not only save you time but will provide your students with immediate feedback on their work.

The screenshot shows the Wiley eGrade Plus interface. The top navigation bar includes 'Assignment' and 'Gradebook'. Below the navigation bar is the 'Assignment List' section, which contains a table of assignments. A pop-up window titled 'Question View: 21-4' is overlaid on the table, showing a financial problem.

ASSIGNMENT AREA	Type	Creation date	Created by	Chapters covered	Status
Chapter 1 Default Assignment	Questions/Exercises	08.22.2003	default	1	Unassigned
Chapter 10 Default Assignment	Questions/Exercises	07.26.2003	default	10	Unassigned
Chapter 11 Default Assignment	Questions/Exercises	07.26.2003	default	11	Unassigned
Chapter 12 Default Assignment	Questions/Exercises				
Chapter 13 Default Assignment	Questions/Exercises				
Chapter 14 Default Assignment	Questions/Exercises				
Chapter 15 Default Assignment	Questions/Exercises				
Chapter 16 Default Assignment	Questions/Exercises				
Chapter 17 Default Assignment	Questions/Exercises				
Chapter 18 Default Assignment	Questions/Exercises				
Chapter 19 Default Assignment	Questions/Exercises				
Chapter 2 Default Assignment	Questions/Exercises				
Chapter 20 Default Assignment	Questions/Exercises				

Question View: 21-4

Presented here is information for Patrick Reed Inc. for 2004.

Retained earnings, January 1	\$250,000
Revenue from legal services	410,000
Total expenses	195,000
Dividends	82,000

Compute ending retained earnings for the year ending December 31, 2004.

Ending retained earnings \$

Assess Student Understanding More Closely

The screenshot shows the 'Student / Summary table' in the Wiley eGrade Plus interface. The table displays student progress and scores for various assignments.

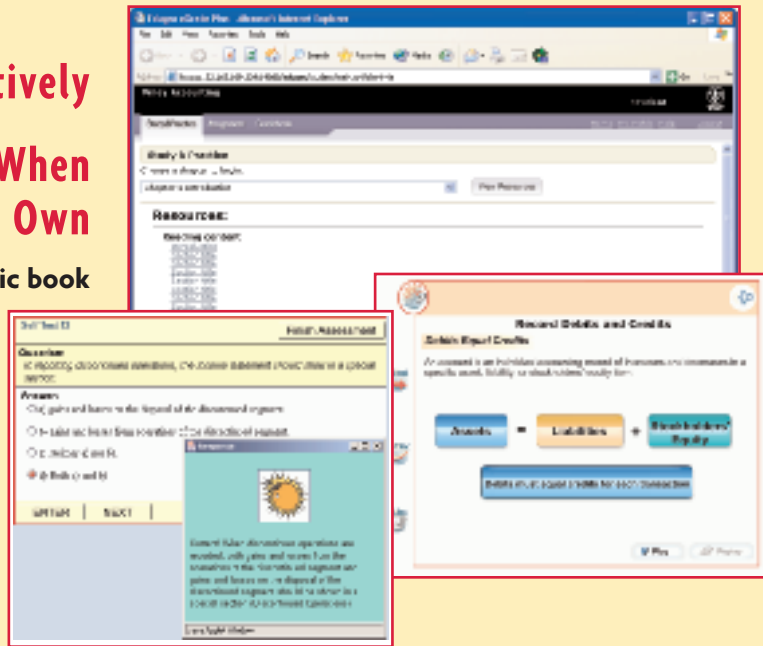
Student	Total Score Questions/Exercises	Progress Readings/resources	Assignment Ref. Code	
			11-01	0004
Lisa Jones	2 / 5	80%	0 / 5	80%
Michael Smith	2 / 5	80%	0 / 5	80%
Mark Jacobs	2 / 5	80%	0 / 5	80%
Jacobus Miller	2 / 5	80%	0 / 5	80%
Alex Harris	2 / 5	80%	0 / 5	80%
Abigail Brown	2 / 5	80%	0 / 5	80%
Maria White	2 / 5	80%	0 / 5	80%
John Rodriguez	2 / 5	80%	0 / 5	80%
Charles Johnson	2 / 5	80%	0 / 5	80%
Emily Wilson	2 / 5	80%	0 / 5	80%
Average score/progress per assignment	2 / 5	80%		

An **Instructor’s Gradebook** will keep track of your students’ progress and allow you to analyze individual and overall class results to determine their progress and level of understanding.

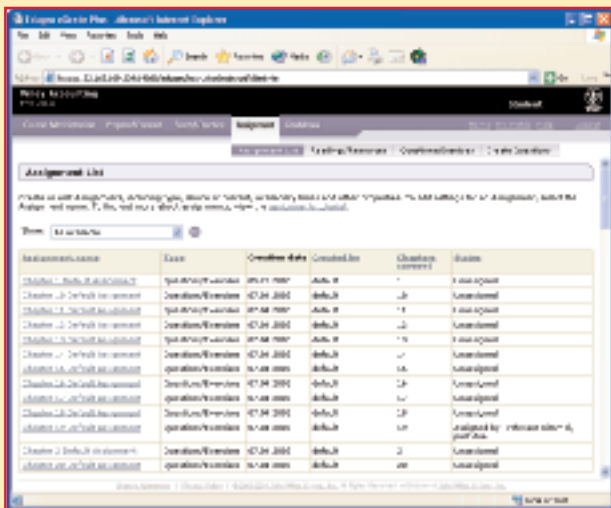
Students, eGrade Plus with EduGen Allows You to:

Study More Effectively Get Immediate Feedback When You Practice on Your Own

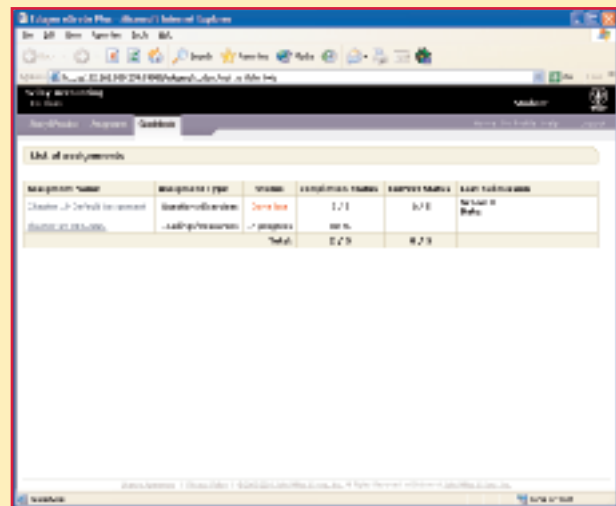
Our website links directly to **electronic book content**, so that you can review the text while you study and complete homework online. Additional resources include **interactive chapter reviews, web-based tutorials, and self-assessment quizzing.**



Complete Assignments / Get Help with Problem Solving



An “**Assignment**” area keeps all your assigned work in one location, making it easy for you to stay on task. In addition, many homework problems contain a **link** to the relevant section of the **electronic book**, providing you with a text explanation to help you conquer problem-solving obstacles as they arise.



Keep Track of How You're Doing

A **Personal Gradebook** allows you to view your results from past assignments at any time.

MANAGERIAL ACCOUNTING

Tools for Business Decision Making

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3RD

EDITION



JOHN WILEY & SONS, INC.

Dedication to come in pp

PUBLISHER: Susan Elbe
EXECUTIVE EDITOR: Jay O'Callaghan
MARKETING MANAGER: Steve Herdegen
DEVELOPMENT EDITOR: Ann Torbert
ASSISTANT EDITOR: Ed Brislin
PRODUCTION SERVICES MANAGER: Jeanine Furino
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PRODUCTION MANAGEMENT SERVICES: Ingrao Associates
SENIOR DESIGNER: To Come
PHOTO EDITOR: Sara Wight
ILLUSTRATION EDITOR: Sandra Rigby
ART STUDIO: Precision Graphics
COVER PHOTO: To Come
TEXT DESIGNER: Dawn L. Stanley

This book was set in New Aster by TECHBOOKS and printed and bound by Von Hoffmann Press. The cover was printed by Von Hoffmann Press.

This book is printed on acid-free paper.

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Library of Congress Cataloging-in-Publication Data

To Come

ISBN US Edition 0471-66178-3
ISBN WIE 0471-66182-1
Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Jerry J. Weygandt, PhD, CPA, is Arthur Andersen Alumni Professor of Accounting at the University of Wisconsin—Madison. He holds a Ph.D. in accounting from the University of Illinois. Articles by Professor Weygandt have appeared in the *Accounting Review*, *Journal of Accounting Research*, *Accounting Horizons*, *Journal of Accountancy*, and other academic and professional journals. These articles have examined such financial reporting issues as accounting for price-level adjustments, pensions, convertible securities, stock option contracts, and interim reports. Professor Weygandt is author of other accounting and financial reporting books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Wisconsin Society of Certified Public Accountants. He has served on numerous committees of the American Accounting Association and as a member of the editorial board of the

Donald E. Kieso, PhD, CPA, received his bachelor's degree from Aurora University and his doctorate in accounting from the University of Illinois. He has served as chairman of the Department of Accountancy and is currently the KPMG Peat Marwick Emeritus Professor of Accountancy at Northern Illinois University. He has public accounting experience with Price Waterhouse & Co. (San Francisco and Chicago) and Arthur Andersen & Co. (Chicago) and research experience with the Research Division of the American Institute of Certified Public Accountants (New York). He has done postdoctorate work as a Visiting Scholar at the University of California at Berkeley and is a recipient of NIU's Teaching Excellence Award and four Golden Apple Teaching Awards. Professor Kieso is the author of other accounting and business books and is a member of the American Accounting Association, the American Institute of Certified Public Accountants, and the Illinois CPA Society. He has served as a member of

Paul D. Kimmel, PhD, CPA, received his bachelor's degree from the University of Minnesota and his doctorate in accounting from the University of Wisconsin. He is an Associate Professor at the University of Wisconsin—Milwaukee, and has public accounting experience with Deloitte & Touche (Minneapolis). He was the recipient of the UWM School of Business Advisory Council Teaching Award, the Reggie Taite Excellence in Teaching Award, and a three-time winner of the Outstanding Teaching Assistant Award at the University of Wisconsin. He is also a recipient of the Elijah Watts Sells Award for

Accounting Review; he also has served as President and Secretary-Treasurer of the American Accounting Association. In addition, he has been actively involved with the American Institute of Certified Public Accountants and has been a member of the Accounting Standards Executive Committee (AcSEC) of that organization. He has served on the FASB task force that examined the reporting issues related to accounting for income taxes and is presently a trustee of the Financial Accounting Foundation. Professor Weygandt has received the Chancellor's Award for Excellence in Teaching and the Beta Gamma Sigma Dean's Teaching Award. He is on the board of directors of M & I Bank of Southern Wisconsin and the Dean Foundation. He is the recipient of the Wisconsin Institute of CPAs Outstanding Educator's Award and the Lifetime Achievement Award. In 2001 he received the American Accounting Association's Outstanding Accounting Educator Award.

the Board of Directors of the Illinois CPA Society, the AACSB's Accounting Accreditation Committees, the State of Illinois Comptroller's Commission, as Secretary-Treasurer of the Federation of Schools of Accountancy, and as Secretary-Treasurer of the American Accounting Association. Professor Kieso is currently serving on the Board of Trustees and Executive Committee of Aurora University, as a member of the Board of Directors of Kishwaukee Community Hospital, and as Treasurer and Director of Valley West Community Hospital. From 1989 to 1993 he served as a charter member of the national Accounting Education Change Commission. He is the recipient of the Outstanding Accounting Educator Award from the Illinois CPA Society, the FSA's Joseph A. Silvos Award of Merit, the NIU Foundation's Humanitarian Award for Service to Higher Education, a Distinguished Service Award from the Illinois CPA Society, and in 2003 an honorary doctorate from Aurora University.

Honorary Distinction for his results on the CPA exam. He is a member of the American Accounting Association and has published articles in *Accounting Review*, *Accounting Horizons*, *Issues in Accounting Education*, *Journal of Accounting Education*, as well as other journals. His research interests include accounting for financial instruments and innovation in accounting education. He has published papers and given numerous talks on incorporating critical thinking into accounting education, and helped prepare a catalog of critical thinking resources for the Federated Schools of Accountancy.

In this Third Edition of *Managerial Accounting: Tools for Business Decision Making*, we strove to build on those things that made the earlier editions a success in the classroom. Our goals are straightforward: We want this book to present the fundamental concepts of managerial accounting in an easy-to-understand fashion. We want to present only those concepts that students need to know. And we want students to leave the course confident that they will be able to apply the basic decision skills that they learned in this course when they enter the workforce. As a result, as you read through the list of changes to this edition and review the text, the common theme you will notice is that these changes were made to simplify and clarify our presentation of basic concepts or to strengthen the students' decision-making skills. We are very excited about this edition of the text. As in the earlier editions, our efforts were driven by the following key beliefs:

“Less is more.”

Our instructional objective is to provide students with an understanding of those concepts that are fundamental to the use of managerial accounting. Most students will forget procedural details within a short period of time. On the other hand, concepts, if well taught, should be remembered for a lifetime. Concepts are especially important in a world where the details are constantly changing.

“Don’t just sit there—do something.”

Students learn best when they are actively engaged. The overriding pedagogical objective of this book is to provide students with continual opportunities for active learning. One of the best tools for active learning is strategically placed questions. Our discussions are framed by questions, often beginning with rhetorical questions and ending with review questions. Even our selection of analytical devices, called *Decision Tools*, is referenced using key questions to emphasize the purpose of each. In addition, technology offers many opportunities to enhance the learning environment. Through the use of interactive activities at our Website at <http://www.wiley.com/college/weygandt>, we offer many opportunities for active learning. In addition, both in the homework and at the Website, we offer more opportunities to employ spreadsheet templates.



“I’ll believe it when I see it.”

Students will be most willing to commit time and energy to a topic when they believe that it is relevant to their future careers. There is no better way to demonstrate relevance than to ground discussion in the real world. By using high-profile companies like Starbucks, Microsoft, Ben & Jerry’s, and Intel to frame our discussion of accounting issues, we demonstrate the relevance of accounting while teaching students about companies with which they are familiar. In addition, because the economy has shifted toward service industries, many of the companies used as examples are service based. This shift is emphasized by our new homework feature which emphasizes more service-company exercises. In addition, we provide many references to service companies such as American Express, Federal Express, and Union Pacific Railroad throughout the text.



“You’ll need to make a decision.”

All business people must make decisions. Decision making involves critical evaluation and analysis of the information at hand, and this takes practice. We have integrated important analytical tools throughout the book. After each new decision tool is presented, we summarize the key features of that tool in a *Decision Toolkit*. At the end of each chapter, the *Using the Decision Toolkit* activity provides a comprehensive demonstration of an analysis of a real-world problem using the decision tools presented in the chapter. The *Broadening Your Perspective* homework activities require the student to employ these decision tools. Finally, seven *Cases for Management Decision Making*, provided at the end of the text, requires students to employ decision-making skills in rich, realistic business settings.



Key Features of Each Chapter

CHAPTER 1, Basic Cost Concepts for Managers

- Compares and contrasts managerial accounting with financial accounting.
- Identifies three broad functions of management.
- Defines three classes of manufacturing costs, organizational structure, and business ethics issues.
- Distinguishes between product costs and period costs.
- Presents costs of goods manufactured section of income statement.
- Presents overview of trends in managerial accounting including shift toward service industries, value chain management, enterprise resource planning, just-in-time inventory, activity-based costing, theory of constraints, and the balanced scorecard.

CHAPTER 2, Job Order Costing

- Provides overview of cost accounting systems.
- Illustrates flow of costs in a job order cost system.
- Presents use of job cost sheet.
- Demonstrates use of predetermined overhead rate.
- Illustrates basic entries for job order cost system.
- Provides simple presentation of overapplied and underapplied overhead.

CHAPTER 3, Process Costing

- Explains the difference between job order and process costing systems.
- Illustrates the flow of costs and end-of-period accounting procedures for process costing.
- Demonstrates computation of physical units of production, equivalent units of production, and unit costs.
- Shows how to assign costs to units of output and prepare a production cost report.

CHAPTER 4, Activity-Based Costing

- Explains the need for activity-based costing (ABC).
- Contrasts ABC to traditional costing systems.
- Identifies numerous activities, activity cost pools, and cost drivers.
- Discusses implications of value-added and non-value added activities.
- Illustrates use of ABC in service industries.
- Reviews the benefits and limitations of ABC.
- Discusses the implications of activity hierarchies levels.
- Appendix illustrates use of just-in-time inventory systems.

CHAPTER 5, Cost-Volume-Profit

- Distinguishes between variable and fixed costs, and explains relevant range and mixed costs.
- Identifies components and assumptions of CVP analysis.
- Discusses concept of contribution margin and illustrates CVP income statement.
- Illustrates calculation of break-even point.
- Discusses margin of safety and target net income.
- Appendix presents variable and absorption costing.

CHAPTER 6, Incremental Analysis

- Presents the concept of incremental analysis through a simple example.
- Explains the concepts of relevant cost, opportunity cost, and sunk cost.
- Applies incremental analysis in the following decision settings:
 - Accept an order at a special price
 - Make or buy
 - Sell or process further, including discussion of joint costs
 - Retain or replace equipment
 - Eliminate an unprofitable segment
- Discusses how to allocate limited resources across multiple products and how to determine break-even points with more than one product.

CHAPTER 7, Variable Costing: A Decision-Making Perspective

We created an entirely new chapter that:

- Explains the difference between absorption costing and variable costing.
- Discusses the effect that changes in production level and sales level have on net income measured under absorption costing versus variable costing.
- Discusses the relative merits of absorption costing versus variable costing for management decision making.
- Explains sales mix and its effect on break-even analysis.
- Promotes understanding of how operating leverage affects profitability.

CHAPTER 8, Pricing

- Demonstrates how to compute target cost when a product's price is determined by the market.
- Illustrates how to compute target selling price using cost-plus pricing.

- Demonstrates how to use time and materials pricing when services are provided.
- Discusses the objective of transfer pricing.
- Illustrates how to determine a transfer price using the cost-based, market-based, and negotiated approaches.
- Explains the issues involved when goods are transferred between countries with different tax rates.

CHAPTER 9, Budgetary Planning

- Discusses benefits of budgeting.
- Illustrates the process of assembling information for a master budget.
- Prepares budgeted income statement, balance sheet, and cash budget.
- Discusses use of budgets in merchandising, service, and not-for-profit enterprises.

CHAPTER 10, Budgetary Control and Responsibility Accounting

- Explains how budgets are used to control costs and operations.
- Contrasts static budgets and flexible budgets.
- Uses a case study to illustrate usefulness of flexible budgets.
- Illustrates responsibility reporting systems.
- Defines cost centers, profit centers, and investment centers.
- Illustrates the computation and use of return on investment and (in a chapter appendix) residual income.

CHAPTER 11, Standard Costs and Balanced Scorecard

- Differentiates between a standard and a budget.
- Discusses advantages of standard costs and methods of computing.
- Illustrates computation of direct materials variance, direct labor variance, and manufacturing overhead variance.

- Demonstrates analysis through comparison of actual with standard.
- Appendix illustrates the journal entries for a standard cost system.

CHAPTER 12, Planning for Capital Investments

- Discusses nature of capital budgeting decisions.
- Describes and illustrates four methods of evaluating capital expenditures:
 - Cash payback technique
 - Net present value method
 - Internal rate of return method
 - Annual rate of return technique
- Discusses the profitability index, post audits, and the implications of intangible benefits when making capital budgeting decisions.

CHAPTER 13, The Statement of Cash Flows

- Discusses the purpose and usefulness of the statement of cash flows.
- Discusses the implications of the product life-cycle for analysis of the statement of cash flows.
- Illustrates preparation of the statement of cash flows using a one year of transactions for both the indirect and direct methods. The presentation is designed to allow the instructor to focus exclusively on either the indirect approach or the direct approach, or to cover both.
- Presents ratio analysis of the statement of cash flows using free cash flow, capital expenditure ratio, current cash debt coverage, cash debt coverage, and cash return on sales.

CHAPTER 14, Financial Analysis: The Big Picture

- Provides a comprehensive discussion of analytical tools and their interrelationships.
- Includes a basic discussion of comprehensive income.
- Illustrates horizontal and vertical analysis.
- Provides thorough analysis of the actual financial statements of Kellogg Company using ratio analysis.

New In This Edition

Textual Changes

The Second Edition of Managerial Accounting was very well received. In the spirit of continuous improvement, we have made many changes to the Third Edition. The most significant changes are summarized as follows.

- **Reorganization of chapters into four sections:** Costing Concepts (Chapters 1-4), Decision-Making Concepts (Chapters 5-8), Planning and Control Concepts (Chapters 9-12), and Performance Evaluation Concepts (Chapters 13 and 14).

- **Addition of new Chapter 7, Variable Costing: A Decision-Making Perspective.**
- Introduction of **more end-of-chapter material using service-company examples.**
- **Introduction of new concepts** such as operating leverage, balanced scorecard, and theory of constraints.
- **Increased emphasis on the use of spreadsheets,** by employing spreadsheets in our illustrations and significantly increasing the amount of end-of-chapter material that is supported by spreadsheets.
- An additional set of **C Problems** appears at the book's Website.

Improvements in Technology—eGrade Plus

Technology offers many opportunities to enrich the learning environment. With this edition of the text we have expanded the materials provided on our Website, which now includes tutorials. The most exciting technological development of this edition is **eGrade Plus**. eGrade plus is a Web-based product that provides an integrated suite of learning resources via a unique class homepage. Through this homepage students can access the following: the full content of the textbook, assignments, selected solutions, exams created by the instructor, and an online gradebook to monitor progress.

Changes Made In The Third Edition

CHAPTER 1, Basic Cost Concepts for Managers

- New discussion of the changing role of managerial accountants.
- New section on organizational structure.
- New section on business ethics.
- New material on the value chain, theory of constraints, and balanced scorecard.
- Revised and added exercises and problems.

CHAPTER 2, Job Order Costing

- Two new Business Insight boxes on job order costing software and use of job order costing by service companies.
- Revised and added exercises and problems.

CHAPTER 3, Process Costing

- Illustrations 3-5 and 3-12 revised for clarity.
- Illustrations 3-23 and 3A-12 presented as spreadsheets.
- Revised and added exercises and problems.

CHAPTER 4, Activity-Based Costing

- Illustration 4-13 revised for clarity.
- Illustrations presented as spreadsheets where appropriate.

- Section on classification of activity levels moved from the appendix into the chapter.
- Section on just-in-time inventory moved into a chapter-end appendix.
- Revised and added exercises and problems.

CHAPTER 5, Cost-Volume-Profit

- Section on target net income moved forward to better integrate with discussion on break-even analysis.
- Appendix on variable costing replaced by new chapter on variable costing (Chapter 7).
- Illustrations presented as spreadsheets where appropriate.
- Revised and added new exercises and problems.

CHAPTER 6, Incremental Analysis

- Chapter on incremental analysis moved from Chapter 9 to Chapter 6 to reinforce concepts of cost-volume-profit.
- Added discussion on theory of constraints.
- New Business Insight box on make-or-buy decision by Superior Industries.
- Illustrations presented as spreadsheets where appropriate.
- Revised and added new exercises and problems.

CHAPTER 7, Variable Costing: A Decision-Making Perspective

Entirely new chapter, created to:

- Explain the difference between absorption costing and variable costing.
- Discuss the effect that changes in production level and sales levels have on net income measured under absorption costing versus variable costing.
- Discuss the relative merits of absorption costing versus variable costing for management decision making.
- Explain sales mix and its effect on break-even analysis.
- Understand how operating leverage affects profitability.

CHAPTER 8, Pricing

- Chapter on pricing moved from Chapter 11 to Chapter 8 to reinforce concepts of cost-volume-profit.
- New formula added for target cost.
- New discussion of the use of variable cost pricing.
- New Business Insight box on the pricing the Levi's jeans sold to Wal-Mart.
- Illustrations presented as spreadsheets where appropriate.
- Revised and added exercises and problems.

CHAPTER 9, Budgetary Planning

- New discussions of participative budgeting and budgetary slack.
- Two new Business Insight boxes on participative budgeting at Time Warner and cash budgeting by engineering firm Alstom.
- Illustrations presented as spreadsheets where appropriate.
- Revised and added exercises and problems.

CHAPTER 10, Budgetary Control and Responsibility Accounting

- Illustrations presented as spreadsheets where appropriate.
- Revised and added exercise and problems.

CHAPTER 11, Standard Costs and Balanced Scorecard

- New section added on balanced scorecard.
- Two new Business Insight boxes on the development of shared industrial standards and the use of balanced scorecard at United Airlines.
- Illustrations presented as spreadsheets where appropriate.
- Revised and added exercises and problems.

CHAPTER 12, Planning for Capital Investments

- Revised explanation on how to estimate net annual cash flow.
- New explanation of cash payback when cash flows are uneven.
- Internal rate of return discussion revised to show trial-and-error procedure.

- New Business Insight box on purchase of information technology for managing investments by mutual fund American Century.
- Revised and added exercises and problems.

CHAPTER 13, The Statement of Cash Flows

- Coverage of the indirect and direct methods of preparing the operating activities section revised, shortened, and edited.
- Coverage of transactions for both the indirect and direct methods condensed from two years' of transactions to one year.
- New Business Insight box on misguided cash flow reporting by WorldCom, Inc. and Dynegy, Inc.
- Revised and added exercises and problems.

CHAPTER 14, Financial Analysis: The Big Picture

- Material on sustainable income deleted.
- Corporate data updated.
- Illustrations presented as spreadsheets where appropriate.
- Revised and added exercises and problems.

APPENDIX A: Time Value of Money**APPENDIX B: Ethical Standards****Cases for Management Decision Making**

- Cases 3 and 4 have been switched to reflect new chapter sequence.
- New Case 6 added for use with Chapters 5 and 9.
- New Case 7 added for use with Chapters 5, 9, and 11.

Proven Pedagogical Framework

In this book we have used many proven pedagogical tools to help students learn accounting concepts and apply them to decision making in the business world. This pedagogical framework emphasizes the *processes* students undergo as they learn.

Learning How to Use the Text

- The text begins with a **Student Owner's Manual**, which helps students understand the value of the text's learning aids and how to use them. After becoming familiar with the pedagogy, students can take a **Learning Styles Quiz** (p. ●●●) to help them identify how they learn best—visually, aurally, through reading and writing, kinesthetically, or through a combination of these styles. They then will find tips on in-class and at-home learning strategies,

as well as help in identifying the text features that would be most useful to them based on their learning style.

- Additionally, Chapter 1 contains notes (printed in blue) that explain each learning aid the first time it appears.
- **The Navigator** pulls all the learning aids together into a learning system. It is designed to guide students through each chapter and help them succeed in learning the material. The Navigator consists of (1) a checklist at the beginning of the chapter, which outlines text features and study aids students will need in order to master the topics, and (2) a series of check boxes that prompt students to use the learning aids and set priorities as they study. At the end of the chapter, students are reminded to return to The

Navigator to check off their completed work. The Navigator from Chapter 2 is shown below.

THE NAVIGATOR ✓	
▶ Scan <i>Study Objectives</i>	<input type="checkbox"/>
▶ Read <i>Feature Story</i>	<input type="checkbox"/>
▶ Read <i>Preview</i>	<input type="checkbox"/>
▶ Read text and answer <i>Before You Go On</i> p. 53 <input type="checkbox"/> p. 64 <input type="checkbox"/> p. 70 <input type="checkbox"/>	
▶ Work <i>Using the Decision Toolkit</i>	<input type="checkbox"/>
▶ Review <i>Summary of Study Objectives</i>	<input type="checkbox"/>
▶ Work <i>Demonstration Problem</i>	<input type="checkbox"/>
▶ Answer <i>Self-Study Questions</i>	<input type="checkbox"/>
▶ Complete <i>Assignments</i>	<input type="checkbox"/>

Understanding the Context

- **Study Objectives**, listed at the beginning of each chapter, form a learning framework throughout the text. Each objective is repeated in the margin at the appropriate place in the main body of the chapter and again in the **Summary of Study Objectives**. Also, end-of-chapter assignment materials are linked to the Study Objectives.
- A chapter-opening **Feature Story** presents a scenario that helps students picture how the chapter topic relates to the real world of accounting and business situations. It also serves as a recurrent example in the chapter. Each story that focuses on a well-known company ends with the company's Web address to encourage students to go online for more information about these companies.
- A chapter **Preview** links the chapter-opening Feature Story to the major topics of the chapter. First, an introductory paragraph explains how the story relates to the topics to be discussed, and then a graphic outline of the chapter provides a "road map," useful for seeing the big picture as well as the connections between subtopics.

Learning the Material

- This book emphasizes the accounting experiences of **real companies and business situations throughout**, from chapter-opening Feature Stories to the chapter's last item of homework material. Details on these many features follow. In addition, every chapter uses accounting practices of real companies. Names of real companies are highlighted in red, and many of these real-world examples and illustrations are identified by a company logo.

- Continuing the real-world flavor of the book, **Business Insight** boxes in each chapter give students glimpses into how real companies make decisions using accounting information. The boxes, highlighted with striking photographs, focus on four different accounting perspectives—those of managers, international business, service companies, and e-business.
- Color **illustrations** support and reinforce the concepts of the text. **Infographics** help students visualize and apply accounting concepts to the real world. These infographics often portray important concepts in entertaining and memorable ways. A number of illustrations demonstrate **spreadsheet format** for computations that lend themselves to that format. When illustrations present financial statements or computations, numbers or categories are highlighted in colored type to draw students' attention to key information.
- **Before You Go On** sections occur at the end of each key topic and consists of two parts: **Review It** serves as a learning check within the chapter by asking students to stop and answer knowledge and comprehension questions about the material just covered. **Do It** is a brief demonstration problem that gives immediate practice using the material just covered. An **Action Plan** lists the steps necessary to complete the task, and a **Solution** is provided to help students understand the reasoning involved in reaching an answer. The **Do It** exercises are keyed to related homework exercises.
- **Helpful Hints** in the margins expand upon or help clarify concepts under discussion in the nearby text. This feature actually makes the book an Annotated *Student Edition*.
- **Key terms** and concepts are printed in blue where they are first explained in the text and are defined again in the end-of-chapter glossary. **Alternative Terminology** notes in the margins present synonymous terms that students may come across in subsequent accounting courses and in business.
- Each chapter presents **decision tools** that are useful for analyzing and solving the business problems discussed in that chapter. At the end of the text discussion relating to the decision tool, a **Decision Toolkit** summarizes the key features of that decision tool and reinforces its purpose.
- A **Using the Decision Toolkit** exercise, which follows the final Before You Go On section in the chapter, shows students how to use the decision tools presented in that chapter.




Putting It Together

At the end of each chapter, between the body of the text material and the homework materials, are several features useful for review and reference:

- A **Summary of Study Objectives** reviews the main points of the chapter; the **Decision Toolkit—A Summary** presents in one place the decision tools used throughout the chapter; and a **Glossary** of important terms gives definitions with page references to the text.
- Next, a **Demonstration Problem** gives students another opportunity to refer to a detailed solution to a representative problem before they do homework assignments. An **Action Plan** presented in the margin lists strategies to assist students in understanding the solution and help establish a logic for approaching similar problems. A **Web icon** tells students that there is an Interactive Demonstration Problem they can work on the book's Website.

Developing Skills through Practice

Throughout the homework material, questions, exercises, and problems make use of the decision tools presented in the chapter.

- **Self-Study Questions** comprise a practice test to enable students to check their understanding of important concepts. These questions are keyed to the Study Objectives, so students can go back and review sections of the chapter in which they find they need further work. Answers appear on the last page of the chapter. A **Web icon** tells students that they can answer the Self-Study Questions in an interactive format on the text's Website. They can also take an additional Self-Test on the Website to further help them master the material.
- **Questions** provide a full review of chapter content and help students prepare for class discussions and testing situations.
- **Brief Exercises** build students' confidence and test their basic skills. Each exercise focuses on a single **Study Objective**.
- Each of the **Exercises** focuses on one or more of the **Study Objectives**. These tend to take a little longer to complete and present more of a challenge to students than Brief Exercises. The Exercises help instructors and students make a manageable transition to more challenging problems. Certain exercises, marked with a , help students practice business writing skills. Exercises relating to service companies are marked with an identifying icon. 
- **Problems** stress the application of the concepts presented in the chapter. Two sets of problems—A and B—have corresponding problems keyed to the same **Study Objectives**, thus giving instructors greater flexibility in assigning homework. A new set of **C Problems** is available online at the book's Website. Certain problems, marked with an icon , help build business writing skills. The **Web icon** indicates that students can complete certain problems in an interactive format on the text's Website.
- Each Brief Exercise, Exercise, and Problem has a **description of the concept** covered and is keyed to the Study Objectives.
- **Spreadsheet Exercises and Problems**, identified by an icon,  can be solved using *Solving Managerial Accounting Problems Using Excel*.

Expanding and Applying Knowledge

Broadening Your Perspective is a unique section at the end of each chapter that offers a wealth of resources to help instructors and students pull together the learning for the chapter. This section offers problems and projects for those instructors who want to broaden the learning experience by bringing in more real-world decision making, analysis, and critical thinking activities. The elements of the **Broadening Your Perspective** section are as follows.

- **Group Decision Cases** help students build decision-making skills by analyzing accounting information in a less structured situation. These cases either require evaluation of a manager's decision, or lead to a decision among alternative courses of action. As group activities, these cases promote teamwork and help prepare students for the business world, where they will be working with teams of people.
- Like the decision cases, the **Managerial Analysis** assignments build analytical and decision-making skills in problematic situations encountered by business managers. They also require the application of business communication skills.
- The **Real-World Focus** problems ask students to apply techniques and concepts presented in the chapter to specific situations faced by actual companies.
- **Exploring the Web** exercises guide students to Web sites where they can find and analyze information related to the chapter topic. These sites can be reached directly or by linking through the text's Website.
- **Communication Activities** give students practice in communicating to different audiences in varying modes—letters, reports, memos, explanations, and analyses. These are skills much in demand by employers.
- Since the ability to read and understand business publications is an asset used over the span of one's career, **Research Assignments** direct students to annual reports or articles published in the *Wall Street Journal* and other popular business periodicals for further study and analysis of key topics.
- **Ethics Cases** contain ethical dilemmas and ask students to analyze the situation, identify the stakeholders affected, describe the ethical issues involved, and decide on an appropriate course of action.

- **Cases for Management Decision Making**, provided at the end of the text, require students to use the decision tools presented in the chapters in realistic business situations. The cases can be used as a comprehensive capstone activity at the end of the course,

or as a recurring activity during the course. They are intended to be richer and more challenging than a traditional problem but are still targeted at an introductory-level student.

Active Teaching and Learning Supplementary Material

Managerial Accounting, Third Edition, features a full range of teaching and learning resources. Driven by the same principles as the textbook, these materials provide a consistent and well-integrated learning system. This hands-on, real-world package guides **instructors** through the process of active learning and gives them the tools to

create an interactive learning environment. With its emphasis on activities, exercises, and the Internet, the package encourages **students** to take an active role in the course and prepares them for decision making in a real-world context.



Weygandt's Integrated Technology Solutions

Helping Teachers Teach and Students Learn
www.wiley.com/college/wegandt

For Instructors

The *Managerial Accounting* companion Website at www.wiley.com/college/wegandt provides a seamless integration of text and media and keeps all of the book's online resources in one easily accessible location. On this Website instructors will find electronic versions of the **Solutions Manual, Instructor's Manual, Test Bank, Computerized Test Bank, PowerPoint presentations**, and other resources.

In addition, portions of the *Managerial Accounting* Website are available with **eGradePlus**, a new online resource that integrates text and media and allows you to customize your course with the following tools:

- A **Course Administration** tool helps instructors manage their course and integrate Wiley Website resources with course-management systems, thereby helping instructors keep all class materials in one location.
- A **Prepare and Present** tool contains all instructor resources. Instructors can easily adapt, customize, and add to this content to meet the needs of their particular course.
- An **Assignment** area is one of the most powerful features of the *Managerial Accounting* Website. It allows instructors to assign online homework and quizzes comprised of end-of-chapter textbook questions, and it automatically grades the submitted materials and records the results in an instructor gradebook, thus

saving valuable instructor time. Students benefit from the option to receive immediate feedback on their work, allowing them to quickly determine their understanding of course content.

- An **Instructor's Gradebook** keeps track of student progress and allows instructors to analyze individual and overall class understanding of course concepts.

For Students

The *Managerial Accounting* Student Website provides a wealth of support materials that will help students develop their conceptual understanding of class material and improve their ability to solve problems. On this Website students will find **Excel templates, PowerPoint presentations, Web quizzing**, and other resources.

In addition, portions of the student Website are available in a premium version where students will find the following resources:

- **"Study and Practice"** resources that can include select interactive, end-of-chapter problems linked directly to the text e-book. Additional resources include interactive chapter reviews, demonstration problem tutorials, and other problem-solving resources.
- An **"Assignment"** area that contains all homework assignments in one location. Many homework problems contain a link to the relevant sections of the e-book, providing students with context-sensitive help.
- A **"Personal Gradebook"** allows each student to view results from past assignments at any time.

Instructor's Active Teaching Aids

An extensive support package, including print and technology tools, helps you maximize your teaching effectiveness. We offer useful supplements for instructors with varying levels of experience and instructional circumstances.

Instructor's Resource System on CD-ROM The Instructor's Resource CD (*IR CD*) provides all instructor support material in an electronic format that is easy to navigate and use. The IR CD contains an electronic version of instructor print supplements that can be used in the classroom, for printing out material, for uploading to your own Website, or for downloading and modifying. The IR CD gives you the flexibility to access and prepare instructional material based on your individual needs.

Solutions Manual The Solutions Manual contains detailed solutions to all exercises and problems in the textbook and suggested answers to the questions and cases. Each chapter includes an *assignment classification table*, an *assignment characteristics table*, and a *Bloom's taxonomy table*. Print is large and bold for easy readability in lecture settings, and instructors may duplicate portions of the manual without paying a permissions fee. A team of independent accuracy checkers has carefully verified the accuracy of the Solutions Manual. (The *Solutions Manual* is also available at www.wiley.com/college/wegandt and on the IR CD.)

Solutions Transparencies Packaged in an organizer box with chapter file folders, these transparencies feature detailed solutions to all exercises and problems in the textbook as well as suggested answers to the Broadening Your Perspectives activities. They feature large, bold type for better projection and easy readability in large classroom settings.

Instructor's Manual The Instructor's Manual is a comprehensive set of resources for preparing and presenting an active learning course. Included in each chapter are chapter reviews and lecture outlines with teaching tips. In addition to an assignment classification table, an assignment characteristics table, and a list of study objectives, each chapter contains a 20-minute quiz. Illustrations at the end of each chapter include diagrams, graphs, and exercises that can be used as classroom handouts or overhead transparencies. (Also available at www.wiley.com/college/wegandt and on the IR CD.)

Teaching Transparencies The Instructor's Manual illustrations are printed on these 4-color acetate transparencies. Designed to support and clarify concepts in the text, the Teaching Transparencies will clarify concepts in the textbook.

Test Bank The Test Bank is a comprehensive testing package that allows instructors to tailor examinations according to study objectives, learning skills, and content. The Text Bank contains nearly 3,000 examination questions and exercises. Examination questions focus on computations, concepts, decision-making, and the real-world environment. Actual financial statements are used throughout to provide a relevant context for questions.

Each chapter of the Test Bank includes a *Summary of Questions by Study Objectives* and a *Summary of Objectives by Questions* (linking test items to study objectives), and an indication of question placement according to Bloom's taxonomy. Exercises are identified by estimated completion time. New to this edition are brief exercises and more computational multiple-choice questions.

In addition to a *final exam*, the Test Bank provides an *Achievement Test for every two chapters* in the textbook and a *Comprehensive Exam for every four chapters* of the text. The tests, which are easy to photocopy and distribute to students, consist of problems and exercises as well as multiple-choice, matching, and true/false questions. (Also available at www.wiley.com/college/wegandt and on the IR CD.)

Computerized Test Bank The Test Bank is also available in a computerized version, for use with IBM and IBM compatible computers running Windows 3.1 or higher. This Computerized Test Bank offers a number of valuable options that allow instructors to create multiple versions of the same test. For example, instructors can scramble the order of questions and the order of answers within a multiple-choice question. The computerized test bank also allows instructors to customize test questions by modifying existing problems or adding new questions. (Also available at www.wiley.com/college/wegandt and on the IR CD.)

PowerPoint Presentations The PowerPoint lecture aid contains a combination of key concepts, images, and problems from the textbook for use in the classroom. Designed according to the organization of the material in the textbook, this series of electronic transparencies can be used to visually reinforce important managerial accounting principles. (Available at www.wiley.com/college/wegandt and on the IR CD.)

WebCT and Blackboard The course-management systems WebCT and Blackboard offer an integrated set of course-management tools that enable instructors to easily design, develop, and manage Web-based and Web-enhanced courses.

The Wiley *Principles of Accounting* WebCT and Blackboard courses contain the basic course-management shell with all online resources for students. It allows the professor to present all or part of a course

online and helps students organize the course material, understand key concepts, and access additional tools. The Wiley WebCT and Blackboard course can be customized to fit an individual professor's needs. For more information, see www.wiley.com/college/solutions.

Business Extra Select Wiley's Business Extra Select program contains copyright-cleared content from XanEdu's premier databases of leading business resources such as Harvard Business School Cases, *Fortune*, *The Economist*, the *Wall Street Journal*, and more.

Creating a Business Extra Select CoursePack is easy! You can combine the content from this title with your Business Extra Select choices in a single custom-published CoursePack in just a few simple steps. No other custom publishing program is this seamless and easy to use!

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Student Active Learning Aids

The Weygandt *Managerial Accounting Website* at www.wiley.com/college/veygandt provides a wealth of support materials that will help students develop their understanding of course concepts and increase their ability to solve problems. On this Website students will find **Web Quizzing**, **Excel Files**, **PowerPoint presentations**, and other resources.

In addition, portions of the student Website are available with **eGradePlus**, an online study aid where students will find **Interactive Homework Questions** assigned by their instructors, a personal gradebook, and much more.

Study Guide The Study Guide is a comprehensive review of *Managerial Accounting* and a powerful tool when used in the classroom and in preparation for exams. Each chapter of the Study Guide includes a chapter review consisting of 20 to 30 key points; a demonstration problem linked to study objectives in the textbook; and additional opportunities for students to practice their knowledge and skills through true/false, multiple-choice, matching, and exercises linked to study objectives. Detailed solutions and explanations to all exercises provide students with immediate feedback.

Working Papers Working Papers are templates customized for each end-of-chapter exercise, problem, and case. A convenient resource for organizing and completing homework assignments, they demonstrate how to correctly set up solution formats.

Excel Working Papers Available on CD-Rom, these Excel-formatted forms can be used for all end-of-chapter exercises, problems, and cases. The Excel Working Papers provide students with the option of printing forms and completing them manually, or entering data electronically and then printing out a completed form. By entering data electronically, students can paste homework to a new file and e-mail the worksheet to their instructor.

Solving Managerial Accounting Problems Using Excel The Excel workbook and templates allow students to complete select end-of-chapter exercises and problems identified by a spreadsheet icon in the margin of the main text. A useful introduction to computers, the electronic spreadsheets also enhance students' accounting skills.

Acknowledgments

In the course of developing *Managerial Accounting*, we have benefited greatly from the input of focus group participants, manuscript reviewers, users of the first and second editions, ancillary authors, and proofers and problem checkers. We greatly appreciate

the constructive suggestions and innovative ideas of the reviewers and the creativity and accuracy of the ancillary authors and checkers. We wish to express our ongoing gratitude to the following people.

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We appreciate the exemplary support and professional commitment given to us by our publisher Susan Elbe, executive editor Jay O'Callaghan, marketing manager Steve Herdegen, development editor Ann Torbert, project editor Ed Brislin, assistant editor Brian Kamins, program assistant Kristen Babroski, media editor Allie Morris, vice president of higher education production and manufacturing Ann Berlin, designer Dawn Stanley, illustration editor Sandra Rigby, photo editor Sara Wight, production manager Jeanine Furino, permissions assistant Yolanda Pagan, project editor Suzanne Ingrao of Ingrao Associates, product manager Carole Kuhn at TECHBOOKS, and project manager Karin Vonesh at Elm Street Publishing Services. We also appreciate

the skills of David Kear, whose excellent work got him promoted into another position (and off the book!) mid-way through the project. All of these professionals provided innumerable services that helped this project take shape. Finally, our thanks for the support provided by Will Pesce, president and chief executive officer, and Bonnie Lieberman, senior vice president of the College Division.

Suggestions and comments from users—instructors and students alike—will be appreciated.

JERRY J. WEYGANDT

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HOW TO USE THE STUDY AIDS IN THIS BOOK

CHAPTER 7

Variable Costing: A Decision-Making Perspective

Study Objectives at the beginning of each chapter give you a framework for learning the specific concepts covered in the chapter. Each study objective reappears in the margin where the concept is discussed. Finally, you can review the study objectives in the **Summary** at the end of the chapter text.

The Navigator is a learning system designed to guide you through each chapter and help you succeed in learning the material. It consists of (1) a checklist at the beginning of the chapter, which outlines text features and study aids you will need, and (2) a series of check boxes that prompt you to use the learning aids in the chapter and set priorities as you study.

STUDY OBJECTIVES

After studying this chapter, you should be able to:

- 1 Explain the difference between absorption costing and variable costing.
- 2 Discuss the effect that changes in production level and sales level have on net income measured under absorption costing versus variable costing.
- 3 Discuss the relative merits of absorption costing versus variable costing for management decision making.
- 4 Explain the term sales mix and its effects on break-even sales.
- 5 Understand how operating leverage affects profitability.



FEATURE STORY

What Goes Up (*fast*), Must Come Down (*fast*)

During the late 1990s many people marveled at the efficiency of the so-called "New Economy," which uses digital technologies to improve business processes. Some managers were actually startled by their own success. The New Economy had created a new formula for profit. For example, David Peterschmidt, chief executive at software developer **Inktomi**, noted that the company had incurred considerable fixed costs in developing new software, but its variable costs were minor. As a consequence, once sales had covered the fixed costs, every additional sale was basically pure profit. When sales were booming, he happily stated, "Next to the federal government, this is the only business that's allowed to print money." But that was then. When the economy lagged, the new profit formula went sour. The company's sales disappeared, but its fixed costs did not. In no time, Inktomi went from record profits to staggering losses.

Many other companies have had similar experiences. As their manufacturing plants have become more automated, their fixed costs have become in-

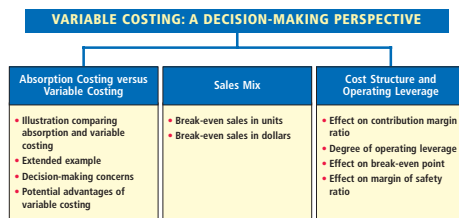
THE NAVIGATOR ✓

- ▶ Scan Study Objectives
- ▶ Read Feature Story
- ▶ Read Preview
- ▶ Read text and answer Before You Go On p. 275 p. 279 p. 282
- ▶ Work Using the Decision Toolkit
- ▶ Review Summary of Study Objectives
- ▶ Work Demonstration Problem
- ▶ Answer Self-Study Questions
- ▶ Complete Assignments

The **Feature Story** helps you picture how the chapter topic relates to the real world of accounting and business. References to the Feature Story throughout the chapter will help you put new ideas in context, organize them, and remember them. Note that the names of **Real Companies** are highlighted in red here and in the chapter text.

PREVIEW OF CHAPTER 7

As the opening story about **Inktomi** and **Intel** suggests, the relationship between a company's fixed and variable costs can have a huge impact on its profitability. In particular, the trend toward cost structures dominated by fixed costs has significantly increased the volatility of many companies' net income. In order to better track and understand the impact of cost structure on corporate profitability, some companies use an approach called *variable costing*. The purpose of this chapter is to show how variable costing can be helpful in making sound business decisions. The content and organization of this chapter are as follows.



Absorption Costing versus Variable Costing

In the earlier chapters, both variable and fixed manufacturing costs were classified as product costs. In job order costing, for example, a job is assigned the costs of direct materials, direct labor, and **both** variable and fixed manufacturing overhead. This costing approach is referred to as **full** or **absorption costing**. It is so named because all manufacturing costs are charged to, or absorbed by, the product. Absorption costing is the approach used for external reporting un-

STUDY OBJECTIVE

1 Explain the difference between absorption costing and variable costing.

The **Preview** links the Feature Story with the major topics of the chapter and describes the purpose of the chapter. It then outlines the topics that are discussed. This narrative and visual preview helps you organize the information you are learning.

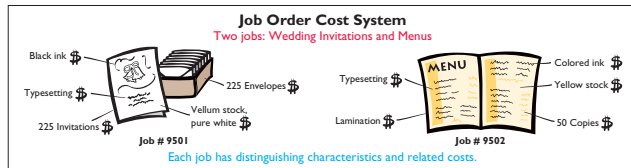
Study Objectives reappear in the margins where the related topic is discussed. End-of-chapter assignments are keyed to study objectives.

JOB ORDER COST SYSTEM

Under a **job order cost system**, costs are assigned to each **job** or to each **batch** of goods. An example of a job would be the manufacture of a mainframe computer by **IBM**, the production of a movie by **Disney**, or the making of a fire truck by **Western States**. An example of a batch would be the printing of 225 wedding invitations by a local print shop, or the printing of a weekly issue of *Fortune* magazine by a hi-tech printer such as **Quad Graphics**. Jobs or batches may be completed to fill a specific customer order or to replenish inventory.

An important feature of job order costing is that each job (or batch) has its own distinguishing characteristics. For example, each house is custom built, each consulting engagement by a CPA firm is unique, and each printing job is different. **The objective is to compute the cost per job.** At each point in the manufacturing of a product or the providing of a service, the job and its associated costs can be identified. A job order cost system measures costs for each completed job, rather than for set time periods. The recording of costs in a job order cost system is shown in Illustration 2-1.

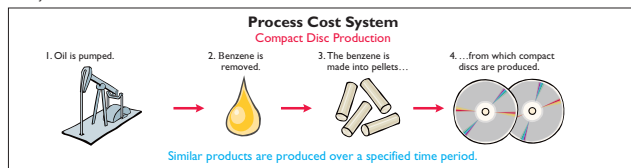
Illustration 2-1 Job order cost system



PROCESS COST SYSTEM

A **process cost system** is used when a large volume of similar products are manufactured. Production is continuous to ensure that adequate inventories of the finished product(s) are on hand. A process cost system is used in the manufacture of cereal by **Kellogg**, the refining of petroleum by **ExxonMobil**, and the production of automobiles by **General Motors**. Process costing accumulates product-related costs for a **period of time** (such as a week or a month) instead of assigning costs to specific products or job orders. In process costing, the costs are assigned to departments or processes for a set period of time. The recording of costs in a process cost system is shown in Illustration 2-2. The process cost system will be discussed further in Chapter 3.

Illustration 2-2 Process cost system



Key Terms and concepts are printed in blue where they are first explained in the text. They are listed and defined again in the end-of-chapter **Glossary**.

Color Illustrations, such as this **Infographic**, help you visualize and apply information as you study. They reinforce important concepts and therefore often contain material that may appear on exams.

Names of **real companies** used as examples in the text are shown in red.

Helpful Hints in the margins are like having an instructor with you as you read. They further clarify concepts being discussed.

Preparing the Operating Budgets

A case study of Hayes Company will be used in preparing the operating budgets. Hayes manufactures and sells a single product, Kitchen-mate. The budgets will be prepared by quarters for the year ending December 31, 2005. Hayes Company begins its annual budgeting process on September 1, 2004, and it completes the budget for 2005 by December 1, 2004.

SALES BUDGET

As shown in the master budget in Illustration 9-2, the **sales budget is the first budget prepared**. Each of the other budgets depends on the sales budget. The **sales budget** is derived from the sales forecast. It represents management's best estimate of sales revenue for the budget period. An inaccurate sales budget may adversely affect net income. For example, an overly optimistic sales budget may result in excessive inventories that may have to be sold at reduced prices. In contrast, an unduly conservative budget may result in loss of sales revenue due to inventory shortages.

Helpful Hint For a retail or manufacturing company, what is the starting point in preparing the master budget, and why? Answer: Preparation of the sales budget is the starting point for the master budget. It sets the level of activity for other functions such as production and purchasing.

The sales budget is prepared by multiplying the expected unit sales volume for each product by its anticipated unit selling price. For Hayes Company, sales volume is expected to be 3,000 units in the first quarter, with 500-unit increments in each succeeding quarter. Based on a sales price of \$60 per unit, the sales budget for the year, by quarters, is shown in Illustration 9-3.

Illustration 9-3 Sales budget

HAYES COMPANY					
Sales Budget					
For the Year Ending December 31, 2005					
	Quarter				Year
	1	2	3	4	
Expected unit sales	3,000	3,500	4,000	4,500	15,000
Unit selling price	\$60	\$60	\$60	\$60	\$60
Total sales	\$180,000	\$210,000	\$240,000	\$270,000	\$900,000

Some companies classify the anticipated sales revenue as cash or credit sales and by geographical regions, territories, or salespersons.

PRODUCTION BUDGET

The **production budget** shows the units that must be produced to meet anticipated sales. Production requirements are determined from the following formula.¹

$$\text{Budgeted Sales Units} + \text{Desired Ending Finished Goods Units} - \text{Beginning Finished Goods Units} = \text{Required Production Units}$$

Illustration 9-4 Production requirements formula

A realistic estimate of ending inventory is essential in scheduling pro-

Some schedules and tabular displays are presented as **Spreadsheets** to show computations that lend themselves use of spreadsheet templates and to get you accustomed to reading computations in this format popular in the business world.

Key Formulas that you will need to know and use are boxed off.



Business Insight Service Company Perspective

Frequently when we think of service companies we think of specific, nonroutine tasks, such as rebuilding an automobile engine, providing consulting services on a business acquisition, or working on a major lawsuit. Clearly, such nonroutine situations would call for job order costing.

However, many service companies specialize in performing repetitive, routine aspects of a particular business. For example, auto-care vendors such as **Jiffy Lube** focus on the routine aspects of car care. **H&R Block** focuses on the routine aspects of basic tax practice, and many large law firms focus on routine legal services, such as uncomplicated divorces. For service companies that perform routine, repetitive services, process costing provides a simple solution to their accounting needs. In fact, since in many instances there is little or no work in process at the end of the period, applying process costing in this setting can be even easier than for a manufacturer.

BEFORE YOU GO ON . . .

Review It

1. In what circumstances would a manufacturer use operations costing instead of process costing?
2. Describe the cost-benefit tradeoff in deciding what costing system to use.



DECISION TOOLKIT

Decision Checkpoints	Info Needed for Decision	Tool to Use for Decision	How to Evaluate Results
What costing method should be used?	Type of product produced	Cost of accounting system; benefits of additional information	The benefits of providing the additional information should exceed the costs of the accounting system needed to develop the information.

Business Insight examples give you more glimpses into how actual companies make decisions using accounting information. These high-interest boxes are classified by four different points of view—management perspectives, international perspectives, service-company perspectives, and e-business perspectives.

Each chapter presents **Decision Tools** that help decision makers analyze and solve business problems. At the end of the text discussion, a **Decision Toolkit** summarizes the key features of a decision tool and reviews why and how you would use it.

Alternative Terminology notes present synonymous terms that you may come across in practice.

Helpful Hint Fixed costs that may be changeable include research, such as new product development, and management training programs.

Total fixed costs also do not have a straight-line relationship over the entire range of activity. Some fixed costs will not change. But it is possible for management to change other fixed costs. For example, in the Feature Story the dance studio's rent was originally variable and then became fixed at a certain amount. It then increased to a new fixed amount when the size of the studio increased beyond a certain point. An example of the behavior of total fixed costs through all potential levels of activity is shown in part (b) of Illustration 5-3.

For most companies, operating at almost zero or at 100 percent capacity is the exception rather than the rule. Instead, companies often operate over a somewhat narrower range, such as 40–80 percent of capacity. The range over which a company expects to operate during a year is called the **relevant range** of the activity index. Within the relevant range, as shown in both diagrams in Illustration 5-4, a straight-line relationship generally exists for both variable and fixed costs.

Alternative Terminology The relevant range is also called the **normal or practical range**.

Comprehensive Example of Process Costing 109

BEFORE YOU GO ON . . .

Review It

1. How do physical units differ from equivalent units of production?
2. What are the formulas for computing unit costs of production?
3. How are costs assigned to units transferred out and in process?
4. What are the four steps in preparing a production cost report?

Do It

In March, Rodayo Manufacturing had the following unit production costs: materials \$6 and conversion costs \$9. On March 1, it had zero work in process. During March, 12,000 units were transferred out, and 800 units that were 25 percent completed as to conversion costs and 100 percent complete as to materials were in ending work in process at March 31. Assign the costs to the units transferred out and in process.

Action Plan

- Assign the total manufacturing cost of \$15 per unit to the 12,000 units transferred out.
- Assign the materials cost and conversion costs based on equivalent units of production to units in process.

Solution The assignment of costs is as follows.

Costs accounted for		
Transferred out (12,000 × \$15)		\$180,000
Work in process, March 31		
Materials (800 × \$6)	\$4,800	
Conversion costs (200 ^a × \$9)	1,800	6,600
Total costs		\$186,600
^a 800 × 25%		

Related exercise material: BE3-4, BE3-5, BE3-6, BE3-7, BE3-8, BE 3-10, E3-3, E3-4, E3-6, E3-8, E3-11, and E3-12.



COSTING SYSTEMS—FINAL COMMENTS

Companies often use a combination of a process cost and a job order cost system, called **operations costing**. Operations costing is similar to process costing in that standardized methods are used to manufacture the product. At the same time, the product may have some customized, individual features that require a job order cost system.

Before You Go On sections follow each key topic.

Review It questions prompt you to stop and review the key points you have just studied. If you cannot answer these questions, you should go back and read the section again.

Brief **Do It** exercises ask you to put to work your newly acquired knowledge. They outline an **Action Plan** necessary to complete the exercise, and they show a **Solution**.

A Using the Decision Toolkit exercise follows the final set of *Review It* questions in the chapter. It asks you to use business information and the decision tools presented in the chapter. You should think through the questions related to the decision before you study the printed *Solution*.

Using the Decision Toolkit

Martinez Building Products Company is one of the largest manufacturers and marketers of unique, custom-made residential garage doors in the U.S. as well as a major supplier of industrial and commercial doors, grills, and counter shutters for the new construction, repair, and remodel markets. Martinez has developed plans for continued expansion of a network of service operations that sell, install, and service manufactured fireplaces, garage doors, and related products.

Martinez uses a job cost system and applies overhead to production on the basis of direct labor cost. In computing a predetermined overhead rate for the year 2005, the company estimated manufacturing overhead to be \$24 million and direct labor costs to be \$20 million. In addition the following information is provided.

Actual costs incurred during 2005

Direct materials used	\$30,000,000
Direct labor cost incurred	21,000,000
Insurance, factory	500,000
Indirect labor	7,500,000
Maintenance	1,000,000
Rent on building	11,000,000
Depreciation on equipment	2,000,000

Instructions

Answer each of the following.

- Why is Martinez Building Products Company using a job order costing system?
- On what basis does Martinez allocate its manufacturing overhead? Compute the predetermined overhead rate for the current year.
- Compute the amount of the under- or overapplied overhead for 2005.
- Martinez had balances in the beginning and ending work in process and finished goods accounts as follows.

	1/1/05	12/31/05
Work in process	\$ 5,000,000	\$ 4,000,000
Finished goods	13,000,000	11,000,000

Determine the (1) cost of goods manufactured and (2) cost of goods sold for Martinez during 2005. Assume that any under- or overapplied overhead should be included in the cost of goods sold.

- During 2005, Job G408 was started and completed. Its cost sheet showed a total cost of \$100,000, and the company prices its product at 50% above its cost. What is the price to the customer if the company follows this pricing strategy?

Solution

- The company is using a job order system because each job (or batch) must have its own distinguishing characteristics. For example, each type of garage door would be different, and therefore a different cost per garage door should be assigned.
- The company allocates its overhead on the basis of direct labor cost. The predetermined overhead rate is 120%, computed as follows.

$$\$24,000,000 \div \$20,000,000 = 120\%$$

(c) Actual manufacturing overhead	\$22,000,000
Overhead cost (\$21,000,000 × 120%)	25,200,000
Overhead	\$ 3,200,000

Glossary 373

Summary of Study Objectives

- 1 Indicate the benefits of budgeting.** The primary advantages of budgeting are that it (a) requires management to plan ahead, (b) provides definite objectives for evaluating performance, (c) creates an early warning system for potential problems, (d) facilitates coordination of activities, (e) results in greater management awareness, and (f) motivates personnel to meet planned objectives.
- 2 State the essentials of effective budgeting.** The essentials of effective budgeting are (a) sound organizational structure, (b) research and analysis, and (c) acceptance by all levels of management.
- 3 Identify the budgets that comprise the master budget.** The master budget consists of the following budgets: (a) sales, (b) production, (c) direct materials, (d) direct labor, (e) manufacturing overhead, (f) selling and administrative expense, (g) budgeted income statement, (h) capital expenditure budget, (i) cash budget, and (j) budgeted balance sheet.
- 4 Describe the sources for preparing the budgeted income statement.** The budgeted income statement is prepared from (a) the sales budget, (b) the budgets for direct materials, direct labor, and manufacturing overhead, and (c) the selling and administrative expense budget.
- 5 Explain the principal sections of a cash budget.** The cash budget has three sections (receipts, disbursements, and financing) and the beginning and ending cash balances.
- 6 Indicate the applicability of budgeting in non-manufacturing companies.** Budgeting may be used by merchandisers for development of a master budget. In service enterprises budgeting is a critical factor in coordinating staff needs with anticipated services. In not-for-profit organizations, the starting point in budgeting is usually expenditures, not receipts.



The **Summary of Study Objectives** reviews the main points related to the Study Objectives. It provides you with another opportunity to review what you have learned as well as to see how the key topics within the chapter fit together.



DECISION TOOLKIT—A SUMMARY

Decision Checkpoints	Info Needed for Decision	Tool to Use for Decision	How to Evaluate Results
 Has the company met its targets for sales, production expenses, selling and administrative expenses, and net income?	 Sales forecasts, inventory levels, projected materials, labor, overhead, and selling and administrative requirements	 Master budget—a set of interrelated budgets including sales, production, materials, labor, overhead, and selling and administrative budgets	 Results are favorable if revenues exceed budgeted amounts, or if expenses are less than budgeted amounts.
Is the company going to need to borrow funds in the coming quarter?	Beginning cash balance, cash receipts, cash disbursements, and desired cash balance	Cash budget	The company will need to borrow money if the cash budget indicates a projected cash deficiency of available cash over cash disbursements for the quarter.

Glossary

Budget A formal written statement of management's plans for a specified future time period, expressed in financial terms. (p. ●●●)

Budgetary slack The amount by which a manager intentionally underestimates budgeted revenues or overestimates budgeted expenses in order to make it easier to achieve budgetary goals. (p. ●●●)

Budget committee A group responsible for coordinating the preparation of the budget. (p. ●●●)

Budgeted balance sheet A projection of financial position at the end of the budget period. (p. ●●●)

Budgeted income statement An estimate of the expected profitability of operations for the budget period. (p. ●●●)



At the end of each chapter, the **Decision Toolkit—A Summary** reviews the context and techniques useful for decision making that were covered in the chapter.

The **Glossary** defines all the **Key Terms** and **Concepts** introduced in the chapter. Page references help you find any terms you need to study further. The **Web icon** tells you that you can review these terms interactively either on the Website.

APPENDIX FIFO METHOD

In Chapter 3, we demonstrated the weighted-average method of computing equivalent units. Some companies use a different method to compute equivalent units, which is referred to as the **first-in, first-out (FIFO) method**. The purpose of this appendix is to illustrate how the FIFO method is used in practice.

Equivalent Units Under FIFO

STUDY OBJECTIVE

1
Compute equivalent units using the FIFO method.

Helpful Hint The computation of unit production costs and the assignment of costs to units transferred out and in process also are done on the same basis.

Under the FIFO method, the computation of equivalent units is done on a first-in, first-out basis. Some companies favor the FIFO method because the FIFO cost assumption usually corresponds to the actual physical flow of the goods. Under the FIFO method, it is assumed therefore that the beginning work in process is completed before new work is started.

Using the FIFO method, equivalent units are the sum of the work performed to:

1. Finish the units of beginning work in process inventory.
2. Complete the units started into production during the period (referred to as the **units started and completed**).
3. Start, but only partially complete, the units in ending work in process inventory.

Normally, in a process costing system, some units will always be in process at both the beginning and end of the period.

In some chapters, **Appendixes** that follow the Decision Toolkit Summary offer expanded coverage of accounting procedures or further discussion of certain topics.

A **Demonstration Problem** is the final step before you begin homework. These sample problems provide you with an **Action Plan** in the margin that lists the strategies needed to approach and solve the problem. The **Solution** demonstrates both the form and content of complete answers. A **Web icon** tells you that there is an **additional Demonstration Problem** on the book's Website, for added practice.

Demonstration Problem 167

Demonstration Problem

Spreadwell Paint Company manufactures two high-quality base paints: an **oil-based** paint and a **latex** paint. Both paints are housepaints and are manufactured in neutral white color only. The white base paints are sold to franchised retail paint and decorating stores where pigments are added to tint (color) the paint as desired by the customer. The oil-based paint is made from, thinned, and cleaned with organic solvents (petroleum products) such as mineral spirits or turpentine. The latex paint is made from, thinned, and cleaned with water; synthetic resin particles are suspended in the water and dry and harden when exposed to the air.

Spreadwell uses the same processing equipment to produce both paints in different production runs. Between batches, the vats and other processing equipment must be washed and cleaned.

After analyzing the company's entire operations, Spreadwell's accountants and production managers have identified activity cost pools and accumulated annual budgeted overhead costs by pool as follows.

Activity Cost Pools	Estimated Overhead
Purchasing	\$ 240,000
Processing (weighing and mixing, grinding, thinning and drying, straining)	1,400,000
Packaging (quarts, gallons, and 5-gallons)	580,000
Testing	240,000
Storage and inventory control	180,000
Washing and cleaning equipment	560,000
Total annual budgeted overhead	\$3,200,000

Following further analysis, activity cost drivers were identified and their expected use by product and activity were scheduled as follows.

Activity Cost Pool	Cost Drivers	Expected Cost Drivers per Activity	Expected Use of Drivers per Product	
			Oil-based	Latex
Purchasing	Purchase orders	1,500 orders	800	700
Processing	Gallons processed	1,000,000 gals.	400,000	600,000
Packaging	Containers filled	400,000 containers	180,000	220,000
Testing	Number of tests	4,000 tests	2,100	1,900
Storage and inventory control	Inventory on hand	18,000 gals.	10,400	7,600
Washing and cleaning equipment	Number of batches	800 batches	350	450

Questions 247

Self-Study Questions

Answers are at the end of the chapter.

- (SO 1) 1. Three of the steps in management's decision making process are (1) review results of decision, (2) determine and evaluate possible courses of action, and (3) make the decision. The steps are prepared in the following order:
(a) (1), (2), (3).
(b) (3), (2), (1).
(c) (2), (1), (3).
(d) (2), (3), (1).
- (SO 2) 2. Incremental analysis is the process of identifying the financial data that:
(a) do not change under alternative courses of action.
(b) change under alternative courses of action.
(c) are mixed under alternative courses of action.
(d) No correct answer is given.
- (SO 3) 3. It costs a company \$14 of variable costs and \$6 of fixed costs to produce product A that sells for \$30. A foreign buyer offers to purchase 3,000 units at \$18 each. If the special offer is accepted and produced with unused capacity, net income will:
(a) decrease \$6,000.
(b) increase \$6,000.
(c) increase \$12,000.
(d) increase \$9,000.
- (SO 3) 4. It costs a company \$14 of variable costs and \$6 of fixed costs to produce product A at full capacity. Product A sells for \$30. A buyer offers to purchase 3,000 units at \$18 each. If the special offer is accepted and produced when capacity is fully utilized, net income will:
(a) increase \$6,000.
(b) increase \$36,000.
(c) decrease \$6,000.
(d) decrease \$36,000.
5. In a make-or-buy decision, relevant costs are: (SO 4)
(a) manufacturing costs that will be saved.
(b) the purchase price of the units.
(c) opportunity costs.
(d) all of the above.
6. The decision rule in a sell-or-process-further decision is: process further as long as the incremental revenue from processing exceeds:
(a) incremental processing costs.
(b) variable processing costs.
(c) fixed processing costs.
(d) No correct answer is given.
7. In a decision to retain or replace equipment, the book value of the old equipment is a (an): (SO 6)
(a) opportunity cost.
(b) sunk cost.
(c) incremental cost.
(d) marginal cost.
8. If an unprofitable segment is eliminated: (SO 7)
(a) net income will always increase.
(b) variable expenses of the eliminated segment will have to be absorbed by other segments.
(c) fixed expenses allocated to the eliminated segment will have to be absorbed by other segments.
(d) net income will always decrease.
9. If the contribution margin per unit is \$15 and it takes 3.0 machine hours to produce the unit, the contribution margin per unit of limited resource is: (SO 8)
(a) \$25.
(b) \$5.
(c) \$4.
(d) No correct answer is given.



Self-Study Questions provide a practice test, keyed to Study Objectives, that gives you an opportunity to check your knowledge of important topics. Answers appear at the end of the chapter. The **Web icon** tells you that you can answer these **Self-Study Questions** interactively on the book's Website. There is an additional **Self-Test** at the Website that can further help you master the material.

Questions allow you to explain your understanding of concepts and relationships from the chapter. Use them to help prepare for class discussion and tests.

Questions

1. What steps are frequently involved in management's decision-making process?
2. Your roommate, Mike Myer, contends that accounting contributes to most of the steps in management's decision-making process. Is your roommate correct? Explain.
3. "Incremental analysis involves the accumulation of information concerning a single course of action." Do you agree? Why?
4. Sara Gura asks for your help concerning the relevance of variable and fixed costs in incremental analysis. Help Sara with her problem.
5. What data are relevant in deciding whether to accept an order at a special price?
6. Son Ly Company has an opportunity to buy parts at \$7 each that currently cost \$10 to make. What manufacturing costs are relevant to this make-or-buy decision?
7. Define the term "opportunity cost." How may this cost be relevant in a make-or-buy decision?
8. What is the decision rule in deciding whether to sell a product or process it further?

170 CHAPTER 4 Activity-Based Costing

Brief Exercises

Identify differences between costing systems. (SO 1)

BE4-1 Infotrac Inc. sells a high-speed retrieval system for mining information. It provides the following information for the year.

	Budgeted	Actual
Overhead cost	\$1,000,000	\$950,000
Machine hours	50,000	45,000
Direct labor hours	100,000	90,000

Overhead is applied on the basis of direct labor hours. (a) Compute the predetermined overhead rate. (b) Determine the amount of overhead applied for the year. (c) Explain how an activity-based costing system might differ in terms of computing a predetermined overhead rate.

Identify differences between costing systems. (SO 1)

BE4-2 Sassafras Inc. has conducted an analysis of overhead costs related to one of its product lines using a traditional costing system (volume-based) and an activity-based costing system. Here are its results.

	Traditional Costing	ABC
Sales revenues	\$600,000	\$600,000
Overhead costs:		
Product RX3	\$ 34,000	\$ 50,000
Product Y12	36,000	20,000
	<u>\$ 70,000</u>	<u>\$ 70,000</u>

Explain how a difference in the overhead costs between the two systems may have occurred.

Identify cost drivers. (SO 4)

BE4-3 Altes Co. identifies the following activities that pertain to manufacturing overhead: Materials Handling, Machine Setups, Factory Machine Maintenance, Factory Supervision, and Quality Control. For each activity, identify an appropriate cost driver.

Identify cost drivers. (SO 4)

BE4-4 Ayala Company manufactures four products in a single plant. The following activities are included in the company's activity analysis: (a) inventory control, (b) material ordering, (c) machine training, (d) quality inspections, (e) material ordering, (f) building maintenance. For each activity, name a cost driver that might be used for each of the four products.

Exercises, which are more difficult than Brief Exercises, help you continue to build confidence in your ability to use the material learned in the chapter.

Some Exercises and Problems focus on accounting situations faced by **Service Companies**. The *service-company icon* highlights these homework materials.

126 CHAPTER 3 Process Cost Accounting

Prepare a partial production cost report. (SO 7, 8)

Compute unit costs. (SO 8)

conversion cost is \$12, determine the costs to be assigned to the units transferred out and the units in ending work in process. The total costs to be assigned are \$664,000.

***BE3-12** Using the data in BE3-11, prepare the cost section of the production cost report for Mora Company.

***BE3-13** Production costs chargeable to the Finishing Department in May at Bell Company are materials \$8,000, labor \$20,000, overhead \$18,000, and transferred-in costs \$62,000. Equivalent units of production are materials 20,000 and conversion costs 19,000. Bell uses the FIFO method to compute equivalent units. Compute the unit costs for materials and conversion costs. Transferred-in costs are considered materials costs.

Exercises

Journalize transactions. (SO 3, 4)

E3-1 Sally May Company manufactures pizza sauce through two production departments: Cooking and Canning. In each process, materials and conversion costs are incurred evenly throughout the process. For the month of March, the work in process accounts show the following debits.

	Cooking	Canning
Beginning work in process	\$ 0-	\$ 4,000
Materials	14,000	6,000
Labor	8,500	7,000
Overhead	29,500	22,000
Costs transferred in		45,000

Instructions

Journalize the March transactions.

Journalize transactions for two processes. (SO 4)

E3-2 Greenleaf Manufacturing Company has two production departments: Cutting and Assembly. August 1 inventories are Raw Materials \$4,200, Work in Process—Cutting \$3,900, Work in Process—Assembly \$10,600, and Finished Goods \$31,900. During August, the following transactions occurred.

1. Purchased \$56,300 of raw materials on account.
2. Incurred \$55,000 of factory labor. (Credit Wages Payable.)
3. Incurred \$70,000 of manufacturing overhead; \$36,000 was paid and the remainder is

478 CHAPTER 11 Standard Costs and Balanced Scorecard

Compute manufacturing overhead variances and interpret findings. (SO 5)

Instructions

- (a) Compute the total, price, and quantity variances for materials and labor.
- (b) Provide two possible explanations for each of the unfavorable variances calculated above, and suggest where responsibility for the unfavorable result might be placed.

E11-7 The following information was taken from the annual manufacturing overhead cost budget of Fernetti Company.

Variable manufacturing overhead costs	\$33,000
Fixed manufacturing overhead costs	\$21,450
Normal production level in labor hours	16,500
Normal production level in units	4,125
Standard labor hours per unit	4

During the year, 4,000 units were produced, 16,100 hours were worked, and the actual manufacturing overhead was \$54,000. Actual fixed manufacturing overhead costs equaled budgeted fixed manufacturing overhead costs. Overhead is applied on the basis of direct labor hours.


Instructions

- (a) Compute the total, fixed, and variable predetermined manufacturing overhead rates.
- (b) Compute the total, controllable, and volume overhead variances.
- (c) Briefly interpret the overhead controllable and volume variances computed in (b).

Compute overhead variances. (SO 5)

E11-8 The loan department of Local Bank uses standard costs to determine the overhead cost of processing loan applications. During the current month a fire occurred, and the accounting records for the department were mostly destroyed. The following data were salvaged from the ashes.

Standard variable overhead rate per hour	\$ 9.00
Standard hours per application	2
Standard hours allowed	2,000
Standard fixed overhead rate per hour	\$ 6
Actual fixed overhead cost	12,000

Certain Exercises and Problems, marked with a pencil icon , help you practice **Business Writing Skills**, which are much in demand among employers.

Each **Problem** helps you pull together and apply several concepts from the chapter. Two sets of **PROBLEMS—A and B**—are keyed to the same Study Objectives and provide additional opportunities for practice.

182 CHAPTER 4 Activity-Based Costing

Assign overhead using traditional costing and ABC; compute unit costs; classify activities as value- or non-value-added. (SO 1, 4, 6)

Problems: Set B

P4-1B Waves Galore, Inc. manufactures hair curlers in Waves Galore's high-volume, "20-watt, triple-heat apparatus" with its glow-in-the-dark handle product (40,000 units annually) and a removable filter. It also

Both products require one hour of direct labor for the blow-dryer. The direct labor cost is \$19 per unit for the blow-dryer.

Waves Galore purchases materials for the product at its Fargo, North Dakota plant. After this year-end will totally replace its system. Waves Galore has identified six activity cost drivers and has assembled the following

Activity Cost Pool	Cost Driver	Estimated Overhead	Expected Use of Cost Drivers	Expected Use of Drivers by Product
Purchasing	Orders	\$ 70,350	335,000	215,000
Receiving	Pounds	150,500	35,000	27,000
Assembling	Machine hours	390,600	217,000	165,000
Testing	Number of parts	51,000	25,500	15,500
Finishing	Gallons	52,580	5,258	3,680
Packing and shipping	Units	787,250	335,000	215,000
	Cartons	60,500	12,100	
		<u>\$438,000</u>		

Instructions

- Under traditional product costing, compute the total unit cost of each product. Prepare a simple comparative schedule of the individual costs by product (similar to Illustration 4-4).
- Under ABC, prepare a schedule showing the computations of the activity-based overhead rates (per cost driver).
- Prepare a schedule assigning each activity's overhead cost pool to each product based on the use of cost drivers. (Include a computation of overhead cost per unit, rounding to the nearest cent.)
- Compute the total cost per unit for each product under ABC.

(d) Cost/unit—Dryer \$22.88

178 CHAPTER 4 Activity-Based Costing

Problems: Set A

Assign overhead using traditional costing and ABC; compute unit costs; classify activities as value- or non-value-added. (SO 1, 4, 6)

P4-1A FireOut, Inc. manufactures steel cylinders and nozzles for two models of fire extinguishers: (1) a home fire extinguisher and (2) a commercial fire extinguisher. The **home model** is a high-volume (54,000 units), half-gallon cylinder that holds 2½ pounds of multipurpose dry chemical at 480 PSI. The **commercial model** is a low-volume (10,200 units), two-gallon cylinder that holds 10 pounds of multi-purpose dry chemical at 390 PSI. Both products require 1.5 hours of direct labor for completion. Therefore, total annual direct labor hours are 96,300 or [1.5 hrs. × (54,000 + 10,200)]. Expected annual manufacturing overhead is \$1,502,280. Thus, the predetermined overhead rate is \$15.60 or (\$1,502,280 ÷ 96,300) per direct labor hour. The direct materials cost per unit is \$18.50 for the home model and \$26.50 for the commercial model. The direct labor cost is \$19 per unit for both the home and the commercial models.

The company's managers identified six activity cost pools and related cost drivers and accumulated overhead by cost pool as follows.

Activity Cost Pool	Cost Driver	Estimated Overhead	Expected Use of Cost Drivers	Expected Use of Drivers by Product
Receiving	Pounds	\$ 70,350	335,000	215,000
Forming	Machine hours	150,500	35,000	27,000
Assembling	Number of parts	390,600	217,000	165,000
Testing	Number of tests	51,000	25,500	15,500
Painting	Gallons	52,580	5,258	3,680
Packing and shipping	Pounds	787,250	335,000	215,000
		<u>\$1,502,280</u>		

Instructions

- Under traditional product costing, compute the total unit cost of both products. Prepare a simple comparative schedule of the individual costs by product (similar to Illustration 4-4).
- Under ABC, prepare a schedule showing the computations of the activity-based overhead rates (per cost driver).
- Prepare a schedule assigning each activity's overhead cost pool to each product based on the use of cost drivers. (Include a computation of overhead cost per unit, rounding to the nearest cent.)
- Compute the total cost per unit for each product under ABC.
- Classify each of the activities as a value-added activity or a non-value-added activity.
- Comment on (1) the comparative overhead cost per unit for the two products under ABC, and (2) the comparative total costs per unit under traditional costing and ABC.

(c) Unit cost—H.M. \$60.90

(d) Cost assigned—H.M. \$1,031,300

(d) Cost/unit—H.M. \$56.60

An additional **C Problem Set** is available at the textbook's Website.

Check Figures in the margin provide key numbers to let you know you're on the right track.

Spreadsheet Exercises and Problems, identified by an icon, are selected problems that can be solved using the spreadsheet software *Solving Principles of Accounting Problems Using Excel*.

The **Broadening Your Perspective** section helps you pull together various concepts from the chapter and apply them to real-world business situations.

Group Decision Cases help you build decision-making skills by analyzing accounting information in a less structured situation. These cases require teams of students to evaluate a manager's decision, or they lead to a decision among alternative courses of action. These group activities help prepare you for the business world, where you will work with teams of colleagues to solve problems.

Managerial Analysis assignments build analytical and decision-making skills in situations encountered by managers. They also will require you to apply and practice business communication skills.

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Problems: Set C

Problem Set C is provided at the book's Web site, www.wiley.com/college/weygand.

BROADENING YOUR PERSPECTIVE

Group Decision Case

BYP 3-1 British Beach Company manufactures suntan lotion, called Surtan, in 11-ounce plastic bottles. Surtan is sold in a competitive market. As a result, management is very cost-conscious. Surtan is manufactured through two processes: mixing and filling. Materials are entered at the beginning of each process, and labor and manufacturing overhead occur uniformly throughout each process. Unit costs are based on the cost per gallon of Surtan using the weighted-average costing approach.

On June 30, 2005, Sara Simmons, the chief accountant for the past 20 years, opted to take early retirement. Her replacement, Joe Jacobs, had extensive accounting experience with motels in the area but only limited contact with manufacturing accounting. During July, Joe correctly accumulated the following production quantity and cost data for the Mixing Department.

Production quantities: Work in process, July 1, 8,000 gallons 75% complete; started into production 100,000 gallons; work in process, July 31, 5,000 gallons 20% complete. Materials are added at the beginning of the process.

Production costs: Beginning work in process \$88,000, comprised of \$21,000 of materials costs and \$67,000 of conversion costs; incurred in July: materials \$600,000, conversion costs \$785,800.

Joe then prepared a production cost report on the basis of physical units started into production. His report showed a production cost of \$14.738 per gallon of Surtan. The management of British Beach was surprised at the high unit cost. The president comes to you, as Sara's top assistant, to review Joe's report and prepare a correct report if necessary.

Instructions

- Show how Joe arrived at the unit cost of \$14.738 per gallon of Surtan.
- What error(s) did Joe make in preparing his production cost report?
- Prepare a correct production cost report for July.

Managerial Analysis

BYP 3-2 Harris Furniture Company manufactures living room furniture through two departments: Framing and Upholstering. Materials are entered at the beginning of each process. Costs transferred in should be treated as materials cost. For May, the following cost data are obtained from the two work in process accounts.

	Framing	Upholstering
Work in process, May 1	\$ -0-	\$?
Materials	420,000	?
Conversion costs	210,000	330,000
Costs transferred in	0	550,000
Costs transferred out	550,000	?
Work in process, May 31	80,000	?

Instructions

- If 3,000 sofas were started into production on May 1 and 2,500 sofas were transferred to Upholstering, what was the unit cost of materials for May in the Framing Department?

Real-World Focus problems ask you to apply techniques and concepts presented in the chapter to specific situations faced by actual companies. These problems often have a global focus.

Exploring the Web exercises guide you to Websites where you can find and analyze information related to the chapter topic.

Communication Activities help you build business communication skills by asking you to engage in real-world business situations using writing, speaking, or presentation skills.

- (b) Using the data in (a) above, what was the per unit conversion cost of the sofas transferred to Upholstering?
- (c) Continuing the assumptions in (a) above, what is the percentage of completion of the units in process at May 31 in the Framing Department?

Real-World Focus

BYP 3-3 **General Microwave Corp.** is engaged primarily in the design, development, manufacture, and marketing of microwave, electronic, and fiber-optic test equipment, components, and subsystems. A substantial portion of the company's microwave product is sold to manufacturers and users of microwave systems and equipment for applications in the defense electronics industry.

General Microwave Corp. reports the following information in one of the notes to its financial statements.

GENERAL MICROWAVE CORPORATION Notes to the Financial Statement
Work in process inventory reflects all accumulated production costs, which are comprised of direct production costs and overhead, reduced by amounts attributable to units delivered. Work in process inventory is reduced to its estimated net realizable value by a charge to cost of sales in the period [in which] excess costs are identified. Raw materials and finished goods inventories are reflected at the lower of cost or market.

Instructions

- (a) What types of manufacturing costs are accumulated in the work in process inventory account?
- (b) What types of information must General Microwave have to be able to compute equivalent units of production?
- (c) How does General Microwave assign costs to the units transferred out of work in process that are completed?

Exploring the Web

BYP 3-4 Search the Internet and find the Web sites of two manufacturers that you think are likely to use process costing. Are there any specifics included in their Web sites that confirm the use of process costing for each of these companies?



Communication Activity

BYP 3-5 Jenna Haines was a good friend of yours in high school and is from your home town. While you chose to major in accounting when you both went away to college, she majored in marketing and management. You have recently been promoted to accounting manager for the Snack Foods Division of Clark Enterprises, and your friend was promoted to regional sales manager for the same division of Clark. Jenna recently telephoned you. She explained that she was familiar with job cost sheets, which had been used by the Special Projects division where she had formerly worked. She was, however, very uncertain cost reports prepared by your division. She faxed you

the following information.

1. The division prepares snack foods for special orders in the Snack Foods Division. Do you prepare the costs of the orders separately?

2. How many production cost reports? Isn't there only one Work in Process

Instructions

Prepare a memo to Jenna. Answer her questions, and include any additional information you think would be helpful. You may write informally, but be careful to use proper grammar and punctuation.

Research Assignment

BYP 3-6 The May 10, 2004, edition of the *Wall Street Journal* includes an article by Evan Ramstad titled "A Tight Squeeze" (p. R9).

Instructions

Read the article and answer the following questions.

- (a) What is **Proview's** profit margin on computer monitors? Why is the profit margin so thin on computer monitors?
- (b) What are some of the steps that Proview International has taken to control costs?
- (c) Why does the company continue to build tube-based monitors even as many consumers are moving away from them?
- (d) Mr. Wang's final comment is, "Every aspect of the business is important, but the most important is cost." Why does he feel this way?

Ethics Case

BYP 3-7 C. C. Daibo Company manufactures a high-tech component that passes through two production processing departments, Molding and Assembly. Department managers are partially compensated on the basis of units of products completed and transferred out relative to units of product put into production. This was intended as encouragement to be efficient and to minimize waste.

Barb Crusmer is the department head in the Molding Department, and Wayne Ter-rago is her quality control inspector. During the month of June, Barb had three new employees who were not yet technically skilled. As a result, many of the units produced in June had minor molding defects. In order to maintain the department's normal high rate of completion, Barb told Wayne to pass through inspection and on to the Assembly Department all units that had defects nondetectable to the human eye. "Company and industry tolerances on this product are too high anyway," says Barb. "Less than 2% of the units we produce are subjected in the market to the stress tolerance we've designed into them. The odds of those 2% being any of this month's units are even less. Anyway, we're saving the company money."

Instructions

- (a) Who are the potential stakeholders involved in this situation?
- (b) What alternatives does Wayne have in this situation? What might the company do to prevent this situation from occurring?

Answers to Self-Study Questions

- 1. b 2. d 3. d 4. b 5. b 6. a 7. c 8. a 9. b 10. b
- 11. b 12. a 13. b

A **Research Assignment** directs you to published articles in business periodicals for further study and analysis of key topics.

In the **Ethics Cases**, you will reflect on typical ethical dilemmas, analyze the stakeholders and the issues involved, and decide on an appropriate course of action.

Answers to Self-Study Questions provide feedback on your understanding of concepts.

After you complete your homework assignments, it's a good idea to go back to **The Navigator** checklist at the start of the chapter to see if you have used all the chapter's study aids.



Remember to go back to the Navigator box on the chapter-opening page and check off your completed work.

Case 1

Greetings Inc.

Greetings Inc. Swims in the Dot-Com Sea: Job Order Costing

The Business Situation

Greetings Inc. has operated for many years as a nationally recognized retailer of greeting cards and small gift items. It has 1,500 stores throughout the United States located in high-traffic malls.

During the late 1990s, as the stock price of many other companies soared, Greetings' stock price remained flat. As a result of a heated 1998 shareholders' meeting, the president of Greetings, Robert Burns, came under pressure from shareholders to grow Greetings' stock value. As a consequence of this pressure, in 1999 Mr. Burns called for a formal analysis of the company's options with regard to business opportunities.

Location was the first issue considered in the analysis. Greetings stores are located in high-traffic malls where rental costs are high. The additional rental cost was justified, however, by the revenue that resulted from these highly visible locations. In recent years, though, the intense competition from other stores in the mall selling similar merchandise has become a disadvantage of the mall locations.

Mr. Burns felt that to increase revenue in the mall locations, Greetings would need to attract new customers and sell more goods to repeat customers. In order to do this, the company would need to add a new product line. However, to keep costs down, the product line should be one that would not require much additional store space. In order to improve earnings, rather than just increase revenues, Greetings would have to carefully manage the costs of this new product line.

After careful consideration of many possible products, the company's management found a product that seemed to be a very good strategic fit with existing products: high-quality unframed and framed prints. The critical element of this plan was that customers would pick out prints by viewing them on wide-screen computer monitors in each store. Orders would be placed and shipped from a central location. Thus, store size would not have to increase at all. To offer these products, Greetings established a new business unit called WallDécor.com. WallDécor is a "profit center"; that is, the manager of the new business unit is responsible for decisions affecting revenues and costs.

*Developed by
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Cases For Management

Decision Making, provided at the end of the text, ask you to use the decision tools presented in the chapters in realistic business situations. Your instructor can assign cases as a comprehensive capstone activity at the end of the course or as a recurring activity during the course.

Case 6



Sweats Galore

The Business Situation

After graduating with a degree in business from Eastern University in Campus Town, USA, Michael Woods realized that he wanted to remain in Campus Town. After a number of unsuccessful attempts at getting a job in his discipline, Michael decided to go into business for himself. In thinking about his business venture, Michael determined that he had four criteria for the new business:

1. He wanted to do something that he would enjoy.
2. He wanted a business that would give back to the community.
3. He wanted a business that would grow and be more successful every year.
4. Realizing that he was going to have to work very hard, Michael wanted a business that would generate a minimum net income of \$25,000 annually.

While reflecting on the criteria he had outlined, Michael, who had been president of his fraternity and served as an officer in several other student organizations, realized that there was no place in Campus Town to have custom sweatshirts made using a silk-screen process. When student organizations wanted sweatshirts to give to their members or to market on campus, the officers had to make a trip to a city 100 miles away to visit "Shirts and More."

Michael had worked as a part-time employee at Shirts and More while he was in high school and had envisioned owning such a shop. He realized that a sweatshirt shop in Campus Town had the potential to meet all four of his criteria. Michael set up an appointment with Jayne Stoll, the owner of Shirts and More, to obtain information useful in getting his shop started. Because Jayne liked Michael and was intrigued by his entrepreneurial spirit, she answered many of Michael's questions.

In addition, Jayne provided information concerning the type of equipment Michael would need for his business and its average useful life. Jayne knows a competitor who is retiring and would like to sell his equipment. Michael can purchase the equipment at the beginning of 2006, and the owner is willing to give him terms of 50 percent due upon purchase and 50 percent due the quarter following the purchase. Michael decided to purchase the following equipment as of January 1, 2006.

*Developed by
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This questionnaire aims to find out something about your preferences for the way you work with information. You will have a preferred learning style, and one part of that learning style is your preference for the intake and the output of ideas and information.

Circle the letter of the answer that best explains your preference. Circle more than one if a single answer does not match your perception. Leave blank any question that does not apply.

1. You are about to give directions to a person who is standing with you. She is staying in a hotel in town and wants to visit your house later. She has a rental car. Would you
 - a. draw a map on paper?
 - b. tell her the directions?
 - c. write down the directions (without a map)?
 - d. pick her up at the hotel in your car?
2. You are not sure whether a word should be spelled “dependent” or “dependant.” Do you
 - c. look it up in the dictionary?
 - a. see the word in your mind and choose by the way it looks?
 - b. sound it out in your mind?
 - d. write both versions down on paper and choose one?
3. You have just received a copy of your itinerary for a world trip. This is of interest to a friend. Would you
 - b. call her immediately and tell her about it?
 - c. send her a copy of the printed itinerary?
 - a. show her on a map of the world?
 - d. share what you plan to do at each place you visit?
4. You are going to cook something as a special treat for your family. Do you
 - d. cook something familiar without the need for instructions?
 - a. thumb through the cookbook looking for ideas from the pictures?
 - c. refer to a specific cookbook where there is a good recipe?
5. A group of tourists has been assigned to you to find out about wildlife reserves or parks. Would you
 - d. drive them to a wildlife reserve or park?
 - a. show them slides and photographs?
 - c. give them pamphlets or a book on wildlife reserves or parks?
 - b. give them a talk on wildlife reserves or parks?
6. You are about to purchase a new CD player. Other than price, what would most influence your decision?
 - b. The salesperson telling you what you want to know.
 - c. Reading the details about it.
 - d. Playing with the controls and listening to it.
 - a. Its fashionable and upscale appearance.
7. Recall a time in your life when you learned how to do something like playing a new board game. Try to avoid choosing a very physical skill, e.g., riding a bike. How did you learn best? By
 - a. visual clues—pictures, diagrams, charts?
 - c. written instructions?
 - b. listening to somebody explaining it?
 - d. doing it or trying it?
8. You have an eye problem. Would you prefer that the doctor
 - b. tell you what is wrong?
 - a. show you a diagram of what is wrong?
 - d. use a model to show what is wrong?
9. You are about to learn to use a new program on a computer. Would you
 - d. sit down at the keyboard and begin to experiment with the program’s features?
 - c. read the manual that comes with the program?
 - b. call a friend and ask questions about it?
10. You are staying in a hotel and have a rental car. You would like to visit friends whose address/location you do not know. Would you like them to
 - a. draw you a map on paper?
 - b. tell you the directions?
 - c. write down the directions (without a map)?
 - d. pick you up at the hotel in their car?
11. Apart from price, what would most influence your decision to buy a particular book?
 - d. You have used a copy before.
 - b. A friend talking about it.
 - c. Quickly reading parts of it.
 - a. The appealing way it looks.
12. A new movie has arrived in town. What would most influence your decision to go (or not go)?
 - b. You heard a radio review about it.
 - c. You read a review about it.
 - a. You saw a preview of it.
13. Do you prefer a lecturer or teacher who likes to use
 - c. a textbook, handouts, readings?
 - a. flow diagrams, charts, graphs?
 - d. field trips, labs, practical sessions?
 - b. discussion, guest speakers?

Count your choices:
 V A R K

Now match the letter or letters you have recorded most to the same letter or letters in the Learning Styles Chart. You may have more than one learning style preference—many people do. Next to each letter in the chart are suggestions that will refer you to different learning aids throughout this text.

LEARNING STYLES CHART

VISUAL



**INTAKE:
TO TAKE IN
THE INFORMATION**

- Pay close attention to charts, drawings, and handouts your instructor uses.
- Underline.
- Use different colors.
- Use symbols, flow charts, graphs, different arrangements on the page, white space.

**TO MAKE A STUDY
PACKAGE**

- Convert your lecture notes into “page pictures.” To do this:
- Use the “Intake” strategies.
 - Reconstruct images in different ways.
 - Redraw pages from memory.
 - Replace words with symbols and initials.
 - Look at your pages.

**TEXT FEATURES
THAT MAY HELP YOU
THE MOST**

- The Navigator**
- Feature Story**
- Preview**
- Infographics/Illustrations**
- Photos**
- Business Insight boxed examples**
- Accounting Equation Analyses**
- Key Terms in blue**
- Words in bold**
- Demonstration**
- Problem/Action Plan**
- Questions/Exercises/ Problems**
- Real-World Focus**
- Research Assignment**
- Exploring the Web**

**OUTPUT:
TO DO WELL ON
EXAMS**

- Recall your “page pictures.”
- Draw diagrams where appropriate.
- Practice turning your visuals back into words.

AURAL



**INTAKE:
TO TAKE IN
THE INFORMATION**

- Attend lectures and tutorials.
- Discuss topics with students and instructors.
- Explain new ideas to other people.
- Use a tape recorder.
- Leave spaces in your lecture notes for later recall.
- Describe overheads, pictures, and visuals to somebody who was not in class.

**TO MAKE A STUDY
PACKAGE**

- You may take poor notes because you prefer to listen. Therefore:
- Expand your notes by talking with others and with information from your textbook.
 - Tape record summarized notes and listen.
 - Read summarized notes out loud.
 - Explain your notes to another “aural” person.

**TEXT FEATURES
THAT MAY HELP YOU
THE MOST**

- Preview**
- Infographics/Illustrations**
- Review It/Do It/Action Plan**
- Summary of Study Objectives**
- Glossary**
- Demonstration**
- Problem/Action Plan**
- Self-Study Questions**
- Questions/Exercises/ Problems**
- Managerial Analysis**
- Exploring the Web**
- Group Decision Cases**
- Communication Activity**
- Ethics Cases**

**OUTPUT:
TO DO WELL ON
EXAMS**

- Talk with the instructor.
- Spend time in quiet places recalling the ideas.
- Practice writing answers to old exam questions.
- Say your answers out loud.

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READING/WRITING



INTAKE: TO TAKE IN THE INFORMATION

- Use lists and headings.
- Use dictionaries, glossaries, and definitions.
- Read handouts, textbooks, and supplementary library readings.
- Use lecture notes.

TO MAKE A STUDY PACKAGE

- Write out words again and again.
- Reread notes silently.
- Rewrite ideas and principles into other words.
- Turn charts, diagrams, and other illustrations into statements.

TEXT FEATURES THAT MAY HELP YOU THE MOST

The Navigator
Feature Story
Study Objectives
Preview
Review It/Do It/Action Plan
Summary of Study Objectives
Glossary
Self-Study Questions
Questions/Exercises/Problems
Writing Problems
Managerial Analysis
Real-World Focus
Exploring the Web
Group Decision Cases
Communication Activity
Research Assignment

OUTPUT: TO DO WELL ON EXAMS

- Write exam answers.
- Practice with multiple-choice questions.
- Write paragraphs, beginnings and endings.
- Write your lists in outline form.
- Arrange your words into hierarchies and points.

KINESTHETIC



INTAKE: TO TAKE IN THE INFORMATION

- Use all your senses.
- Go to labs, take field trips.
- Listen to real-life examples.
- Pay attention to applications.
- Use hands-on approaches.
- Use trial-and-error methods.

TO MAKE A STUDY PACKAGE

- You may take poor notes because topics do not seem concrete or relevant. Therefore:
- Put examples in your summaries.
 - Use case studies and applications to help with principles and abstract concepts.
 - Talk about your notes with another “kinesthetic” person.
 - Use pictures and photographs that illustrate an idea.

TEXT FEATURES THAT MAY HELP YOU THE MOST

The Navigator
Feature Story
Preview
Infographics/Illustrations
Review It/Do It/Action Plan
Summary of Study Objectives
Demonstration Problem/Action Plan
Self-Study Questions
Questions/Exercises/Problems
Research Assignment
Exploring the Web
Group Decision Cases
Communication Activity

OUTPUT: TO DO WELL ON EXAMS

- Write practice answers.
- Role-play the exam situation.



For all learning styles: Be sure to use the book's Website to enhance your understanding of the concepts and procedures of the text.

COST CONCEPTS FOR DECISION MAKERS

- 1** Basic Cost Concepts for Managers, 000
- 2** Job Order Costing, 000
- 3** Process Costing, 000
- 4** Activity-Based Costing, 000

DECISION-MAKING CONCEPTS

- 5** Cost-Volume-Profit, 000
- 6** Incremental Analysis, 000
- 7** Variable Costing: A Decision-Making Perspective, 000
- 8** Pricing, 000

PLANNING AND CONTROL CONCEPTS

- 9** Budgetary Planning, 000
- 10** Budgetary Control and Responsibility Accounting, 000
- 11** Standard Costs and Balanced Scorecard, 000
- 12** Planning for Capital Investments, 000

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- 13** The Statement of Cash Flows, 000
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- A** Present Value Concepts, 000
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COST CONCEPTS FOR DECISION MAKERS

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Job Order Costing, 000

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Job Order Cost Flow, 000
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Equivalent Units, 000
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Compute the Physical Unit Flow (Step 1), 000
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Activity-Based Costing, 000

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DECISION-MAKING CONCEPTS

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Feature Story: "I'll Call Your Bluff, and Raise You 43 Percent"

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