

To the Instructor

Introduction

As we embark on our tenth year of publication, we are extremely pleased at the continuing enthusiasm for *USING INFORMATION TECHNOLOGY* as a concepts textbook for the introductory college course on computers. More than half a million students have been introduced to this dynamic and exciting subject through UIT's five earlier editions, and instructors in over 600 schools have selected it for use in their courses.

What are the reasons for this acceptance? One is that UIT was the first textbook to foresee and define the impact of digital convergence—the fusion of computers and communications—as the new and broader foundation for this course. And we have continued to try to pioneer in coverage of new developments. Thus, we are gratified to hear reviewers label UIT as the most up-to-date text published for this course.

The UIT Difference: A Book to Motivate the Unmotivated, & to Teach to a Variety of Students' Computer Backgrounds

But there are two other important reasons, we think, for UIT's frequent adoption. We've often asked instructors—in reviews, surveys, and focus groups—**“What is your most significant challenge in teaching this course?”**

Quote

What instructors say is their most significant challenge in teaching this course

“Motivating the unmotivated is the primary challenge.”
—Lynn Wermers,
North Shore
Community
College, MA

“Coping with the wide disparity of skill levels among the enrolled students.”
—Edmund Mannion,
California State
University—Chico

- **The first most frequent answer is: “Trying to make the course interesting and challenging.”** One professor at a state university seems to speak for most when she says: “Making the course interesting and challenging.” Others echo her with remarks such as “Keeping students interested in the material enough to study” and “Keeping the students engaged who know some, but not all, of the material.” Said one professor, “Many students take the course because they must, instead of because the material interests them.” Another speaks about the need to address a “variety of skill/knowledge levels while keeping the course challenging and interesting”—which brings us to the second response.
- **The second most frequent answer is: “Trying to teach to students with a variety of computer backgrounds.”** The most significant challenge in teaching this course “is trying to provide material to the varied levels of students in the class,” says an instructor at a large Midwestern university. Another says the course gets students from all backgrounds, ranging from “Which button do you push on the mouse?” to “Already built and maintain a web page with html.” Says a third, “mixed-ability classes [make] it difficult to appeal to all students at the same time.” And a fourth: “How do you keep the ‘techies’ interested without losing the beginners?”

As authors, we find information technology tremendously exciting, but we recognize that many students take the course reluctantly. And we also recognize that many students come to the subject with attitudes ranging from complete apathy and unfamiliarity to a high degree of experience and technical understanding.

To address the problem of **motivating the unmotivated and teaching to a disparity of backgrounds**, UIT offers unequaled treatment of the following:

1. **Practicality**
2. **Readability**
3. **Currentness**
4. **Three-level critical thinking system**

We explain these features below.

Feature #1: Emphasis on Practicality

Quote

About UIT's practicality

"[A] definite strength is the attention to practicality for the nonmajor student."
—Ruthann Williams, Central Missouri State University

See the list of *Practical Action Boxes* on the inside *back* cover.

See the list of *Survival Tips* on the inside *back* cover.

Quote

About UIT's practicality

"I am VERY pleased with the early discussion of the Internet. . . . It is a real attention grabber at the early part of the semester when students are vulnerable to dropping the course."
—Lynn Wermers, North Shore Community College, MA

This popular feature received overwhelming acceptance by both students and instructors in past editions. **Practical advice**, of the sort found in computer magazines, newspaper technology sections, and general-interest computer books, is expressed not only in the text but also in the following:

- **Bookmark It! Practical Action Box:** This box consists of optional material on practical matters. *Examples:* "Managing Your E-Mail," "Web Research, Term Papers, & Plagiarism," "How to Buy a Notebook," "Preventing Your Identity from Getting Stolen." **New to this edition:** "Installing & Reinstalling Software."
- **Survival Tips:** In the margins throughout we present utilitarian **Survival Tips** to aid students' explorations of the infotech world. *Examples:* "Recycling Old PCs," "Handling the Annoyance of Spam," "Don't Be Traced," "Urban Legends & Lies on the Internet," "Don't Trash Those Icons," "Decimal to Binary Conversion," "Are Your PC's USB Ports 1.1 or 2.0?," "Data Recovery," "CD Read, Write, & Rewrite Speeds," "Zip vs. Tape," "Temp File Removal," "Your Choice: More Colors or More Resolution?," "Customize Your Sounds."
- **Early discussion of Internet:** Many instructors have told us they like having "**e-concepts**" **treated earlier and more extensively** in this text compared with other books. Accordingly, the Internet and World Wide Web are **discussed in Chapter 2** instead of in a later chapter, reflecting their importance in students' daily lives.

B O O K M A R K I T !

PRACTICAL ACTION BOX

Choosing an Internet Service Provider

page 76

Survival Tip

Accessing Email While Traveling Abroad

To access your email using a local call while traveling outside North America, get a free email account with Yahoo! (<http://mail.yahoo>), Hotmail (www.hotmail.com), or Mail.com (www.mail.com).



Chapter 2

THE INTERNET & THE WORLD WIDE WEB: EXPLORING CYBERSPACE 37

Quote

About UIT's
practicality

"The computer ad
[is] a practical
approach, easy to
relate to."

—Arthur Valentine,
Sussex Community
College, NJ

- **How to understand a computer ad:** In the hardware chapters (Chapters 4 and 5), we explain important concepts by showing students **how to understand the hardware components in a hypothetical PC ad.**



- 7-Bay Mid-Tower Case
- Intel Pentium 4 Processor 2 GHz
- 128 MB 266 MHz DDR SDRAM
- 512KB L2 Cache
- 2 USB Ports
- 56 Kbps Internal Modem
- 3D AGP Graphics Card (64 MB)
- Sound Blaster Digital Sound Card
- 3.5" Floppy Drive
- Iomega 250 MB Zip Drive
- 80 GB Ultra ATA 7200 RPM Hard Drive
- 4X DVD-RW
- 104-Key Keyboard
- Microsoft IntelliMouse
- 17", .27dp Monitor (16" Display)
- HP DeskJet 970Cse Printer

Details of this ad are explained throughout this chapter. See the little magnifying glass:



page 143

Feature #2: Emphasis on Readability & Reinforcement for Learning

We offer the following features for reinforcing student learning:

Quote

About UIT's
readability

"I have many good comments about the readability of this text from both students and faculty from other disciplines."

—Ruth Schwartz,
Indiana University—
South Bend

- **Interesting writing:** Studies have found that textbooks **written in an imaginative style** significantly improve students' ability to retain information. Both instructors and students have commented on the distinctiveness of the writing in this book. We employ a number of journalistic devices—colorful anecdotes, short biographical sketches, interesting observations in direct quotes—to make the material as interesting as possible. We also use real anecdotes and examples rather than fictionalized ones.
- **Key terms AND definitions emphasized:** To help readers avoid any confusion about which terms are important and what they actually mean, we print each key term in ***bold italic underscore*** and its definition in **boldface**. *Example* (from Chapter 1): "***Data*** consists of raw facts and figures that are processed into information."
- **Material in bite-size portions:** Major ideas are presented in **bite-size form**, with generous use of advance organizers, bulleted lists, and new paragraphing when a new idea is introduced. Most **sentences have been kept short**, the majority not exceeding 22–25 words in length.
- **Key Questions—to help students read with purpose:** We have **crafted the learning objectives as Key Questions** to help readers focus on

See *Ethics examples* on pp. 26, 55, 76, 242, 265, 267, 282, 283, 285, 296, 297, 299.

New readability/reinforcement features!
See inside *front* cover for pages on which *More-Info!* and *Security* icons appear.

essentials. Each Key Question appears in two places: on the first page of the chapter and beneath the section head. Key Questions are also tied to the end-of-chapter summary, as we will explain.

- **QuickChecks:** Appearing periodically throughout the text, **QuickChecks** spur students to recall facts and concepts they have just read.
- **Summary:** Each chapter ends with a **Summary** of important terms, with an explanation of **what they are and why they are important**. The terms are accompanied, when appropriate, by a picture. Each concept or term is also given a cross-reference page number that refers the reader to the main discussion within the text. In addition, the term or concept is given a Key Question number corresponding to the appropriate Key Question (learning objective).
- **Emphasis throughout on ethics:** Many texts discuss ethics in isolation, usually in one of the final chapters. We believe this topic is too important to be treated last or lightly, and users have agreed. Thus, **we cover ethical matters throughout the book**, as indicated by the special icon shown at right. *Example:* We discuss such all-important questions as copying of Internet files, online plagiarism, privacy, computer crime, and netiquette.
- **New to this edition! More Info! icons help students find their own answers** to their questions. The previous edition featured “Click-along” marginal icons that directed readers to the McGraw-Hill website for updates, elaboration, and further examples. This concept was well received, but we realized it didn’t enable students to pursue their own range of interests—exactly the kind of thing that makes the World Wide Web such a valuable learning instrument. Accordingly, in this edition we have initiated a **“More Info!” page-margin icon that shows students how to begin their own journey of discovery**, often starting from a particular URL. *Examples:* “More about instant messaging services and products” (p. 52). “More information on web radio” (p. 69). “Researching Linux” (p. 102). See the pages listed on the inside front cover.
- **New to this edition!** In the post 9-11 era, security concerns are of gravest importance. Although we devote several pages (in Chapter 9) to security, we also reinforce student awareness by **highlighting with page-margin Security icons instances of security-related material throughout the book**. *Example:* On p. 55, we use the special icon shown at right to highlight the advice that one should pretend that every email message one sends “is a postcard that can be read by anyone.”



more info!

If you refuse cookies? Read the article at <http://computer.howstuffworks.com/cookie.htm>.

SECURITY

Feature #3: Currentness

Reviewers have applauded previous editions of UIT for being **more up to date than other texts**. For example, we have traditionally ended many chapters with a forward-looking section that offers a preview of technologies to come—some of which are realized even as students are using the book. Among the new topics and terms covered in this edition are: *abandonware*, *Apple Macintosh G4 and G5*, *Athlon 64 FX-51*, *baseband transmission*, *biometric identifier*, *blog/weblog*, *DDR-SDRAM*, *FireWire*, *flash drive*, *flatbed*

Quote

About UIT's
currentness

"I am impressed
with the currency of
information."

—Sandy Week,
University of
Nevada—Reno

New currentness feature!
See inside *front* cover for
pages on which More-
Info! icons appear.

scanner, foreign key, handheld scanners, intelligent hub, keychain memory, Klez worm, LaserCard, Lindows, Lycoris, nanocomputer, national identity card, network-centric computing, Nigerian letter scam, passive hub, personal electronic pen, QXGA monitors, sheetfed scanners, smart mobs, SQL Slammer Code worm, switching hub, USB 1.1 and 2.0, USB hub, Windows CE .NET, Windows Server 2003, Windows XP Service Pack 1, Windows XP Tablet PC Edition.

In addition, in this latest edition, **we have taken the notion of currentness to another level through the "MoreInfo!" feature to encourage students to obtain their own updates** about material. *Example:* The subject of instant messaging is one that changes constantly. Thus, to help students stay current, on p. 52 we give them MoreInfo! advice that enables them to investigate new IM services and products.



Feature #4: Three-Level System to Help Students Think Critically about Information Technology

Quote

About UIT's critical
thinking emphasis

"The critical
thinking emphasis
is an important
feature because it
allows students to
test their knowledge
of the material."

—Mary Kay Tarver,
East Central
University, OK

This feature, which has been in place for the preceding two editions, has been warmly received. More and more instructors seem to have become familiar with **Benjamin Bloom's *Taxonomy of Educational Objectives***, describing a hierarchy of six critical-thinking skills: (a) two lower-order skills—*memorization* and *comprehension*; and (b) four higher-order skills—*application*, *analysis*, *synthesis*, and *evaluation*. Drawing on our experience in writing books to guide students to college success, we have implemented Bloom's ideas in a three-stage pedagogical approach, using the following hierarchical approach in the Chapter Review at the end of every chapter:

- **Stage 1 learning—memorization:** "I can recognize and recall information." Using self-test questions, multiple-choice questions, and true/false questions, we enable students to test how well they recall basic terms and concepts.
- **Stage 2 learning—comprehension:** "I can recall information in my own terms and explain them to a friend." Using open-ended short-answer questions, we enable students to re-express terms and concepts in their own words.
- **Stage 3 learning—applying, analyzing, synthesizing, evaluating:** "I can apply what I've learned, relate these ideas to other concepts, build on other knowledge, and use all these thinking skills to form a judgment." In this part of the Chapter Review, we ask students to put the ideas into effect using the activities described. The purpose is to help students take possession of the ideas, make them their own, and apply them realistically to their own ideas.

Resources for Instructors

The instructor supplements for the last edition UNDERWENT A MAJOR REVISION, with a focus on enhancing instructors' ability to understand and utilize all the resources provided for the text. **We and the publisher have tried to maintain the same respect and care with these supplements in this edition as well.**

- **Instructor's Manual:** The electronic Instructor's Manual, available as part of the Instructor's Resource Kit, now **incorporates all of the resources available to the instructor for each chapter.** Instructors now

Test Table Example
Chapter 2 The Internet & the World Wide Web: Exploring Cyberspace

Test Table

| Learning Level | 1 | 2 | 3 |
|---|--|--|--|
| Key Questions | Knows Basic Terms and Facts | Understands Concepts and Principles | Applies Principles |
| 2.1 What are the means of connecting to the Internet, and how fast are they? | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 | 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 | 28, 29, 30, 31, 32 |
| | 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130 <u>244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257</u> | 131, 132, 133, 134, 135, 136, 137, 138, 139 <u>258, 259, 260, 261, 262, 263, 264</u> | 140, 141, 142, 143, 144, 145 329*, 330*, 331* |
| 2.2 What is an Internet service provider, and what kinds of services do ISPs provide? | 33, 34, 35 | 36, 37, 38 | |
| | 146, 147 <u>265, 266, 267</u> | 148 332* | 149, 150 |

have the ability to harness different visual assets to create effective lectures. The Instructor's Manual works like a web page that is easy to navigate and simple to understand because it provides links to appropriate assets elsewhere on the Web or CD-ROM. Each chapter contains an overview of the changes to this edition, a chapter overview, teaching tips, PowerPoint slides with speaker's notes, group projects, outside projects, web exercises, text figures, and links to appropriate information and games on the book's website.

- **Testbank:** The Testbank format **allows instructors to effectively pinpoint areas of content within each chapter on which to test students.** Each chapter starts off with a "Test Table" that provides a convenient guide for finding questions that pertain to chapter objectives and difficulty level. The Test Table also indicates the type of question so that instructors can create exams using the question types of their choice. The test questions are first organized by chapter objectives and then learning level; they include answers, Key Question numbers, learning levels, page references from the text, and rationales. Following each chapter's test bank questions is a Quick Quiz, designed for use when instructors don't have time to tailor an exam.

Diploma by Brownstone: Diploma is the most flexible, powerful, and easy-to-use computer-based testing system available for higher education. The Diploma system allows instructors to create an exam as a printed version, as a LAN-based online version, or as an Internet version. Diploma also includes grade book features, which automate the entire testing process.

- **PowerPoint presentation:** The PowerPoint presentation **includes additional material** that expands upon important topics from the text,

Quote

About UIT's ancillaries

"[The items in the Online Learning Center] are outstanding, especially the Instructor's Manual Lecture Notes, the PowerPoint presentations, . . . and the Group Exercises."

—Tim Pinkelman, Bowling Green State University, OH

allowing instructors to create interesting and engaging classroom presentations. Each chapter of the presentation includes important illustrations, and animations to enable instructors to emphasize important concepts in memorable ways. **Each slide of the presentation is integrated into the Instructor's Manual** so that instructors can quickly and effectively determine which slides they would like to use in their presentations.

- **Figures from the book:** All of the photos, illustrations, screenshots, and tables are available electronically for use in presentations, transparencies, or handouts.
- **Online Learning Center:** (www.mhhe.com/cit/uit6e) Designed to provide a wide variety of learning opportunities for students, the website for the sixth edition now includes a Web Summary for each chapter, with all of the key terms linked to relevant exercises, games, web links, and self-quizzes. Additional end-of-chapter exercises, web exercises, group projects, outside projects, Instructor's Manual, and PowerPoint presentations are also available online for instructors to download.
- **Interactive Companion:** Twenty interactive tutorial labs on some of the most popular topics are available on the Online Learning Center. These tutorials expand the reach and scope of the text by combining video, interactive exercises, animation, additional content, and actual "lab" tutorials. The labs include the following topics:

Using Information Technology Interactive Companion Labs

| Lab | Function | Chapter |
|----------------------------------|---|---------|
| <i>Binary Numbers</i> | Explore binary numbers including such topics as binary numbers as switches, how to make a binary number, binary addition, and binary logic. | 4 |
| <i>Basic Programming</i> | Learn about the thought processes and tools used to instruct computers to perform our work. This lab includes topics on basic computer tasks (input, processing, and output), variables, constants, assignment, mathematical calculations, and reusing code. | App. |
| <i>Computer Anatomy</i> | Learn the parts that make up a personal computer, including Input, Output, Storage, and Processing devices. | 4 & 5 |
| <i>Disk Fragmentation</i> | Understand how data and programs are stored and accessed. Includes concepts such as disk storage, blocks, fragmentation, defragmentation, media types, and data storage. | 4 |
| <i>E-mail Essentials</i> | Learn the tools, techniques, and etiquette needed to communicate by e-mail. | 2 & 6 |
| <i>Multimedia Tools</i> | Learn the basics of creating a simple multimedia presentation by understanding the types of media, virtual reality, interactivity, multimedia applications, and the uses of multimedia. | 2 & 3 |
| <i>Workplace Issues</i> | Learn how Ethics, Privacy, Security, and Time Wasters affect you, either as an employer or as an employee. | All |
| <i>Introduction to Databases</i> | This lab will introduce you to the many concepts involved in making, maintaining, and using a database to store large amounts of related data. You will have the opportunity to design a database, create the database, and use the information you entered to generate useful reports. | 7 |
| <i>Programming II</i> | Learn some of the essentials of visual programming, then implement them to build a working program. | App. |
| <i>Network Communications</i> | Explore the many types of computer-based communications; how they work and how to use them effectively. | 2 & 6 |

Using Information Technology Interactive Companion Labs (continued)

| Lab | Function | Chapter |
|---|---|---------|
| <i>User Interfaces</i> | Learn the basics of user interface elements, key Windows interface features, customizing the Windows interface, key Macintosh interface features, customizing the Macintosh interface, and key Unix (Linux) interface features. | 3 |
| <i>Purchasing Decisions</i> | Explore the factors you should consider when deciding what computer to buy, including software, the differences between PCs and Macs, the myths about CPU power, internal upgrades, and external upgrades. | 4 |
| <i>File Organization</i> | Learn about the way files are stored on your hard drive and how you can configure this storage to help you work more efficiently. | 7 |
| <i>Word Processing and Spreadsheets</i> | Learn the common features of word processing and spreadsheet programs, the basic features of word processing programs, and the basic features of spreadsheet programs. | 3 |
| <i>Internet Overview</i> | Explore features of the Internet including communication, browsing, sharing, and how to get connected. | 2 |
| <i>Computer Troubleshooting</i> | Learn how to avoid, repair, and troubleshoot computer problems. | All |
| <i>Presentation Techniques</i> | Learn the tricks for making effective presentations such as focusing your presentation to reach your audience, creating effective graphics, using sound and video in your presentation, and creating auxiliary materials to help augment your presentation or generate discussions. | 3 |
| <i>Photo Editing</i> | Learn how to edit digital photos including such topics as capturing digital images, storing devices, resizing and enhancement, and other manipulation techniques. | 3 |
| <i>Programming Overview</i> | Learn how code is written and changed into machine language by compilers or interpreters. Learn the different types of languages including object-oriented, procedural, and declarative. | App. |
| <i>SQL Queries</i> | Learn what a relational database is (RDBMS), what a structured language is (SQL), how to use SQL to build a database, and how to use SQL to retrieve data from a database. | 7 |

Digital Solutions to Help You Manage Your Course

PageOut: PageOut is our Course Web Site Development Center and offers a syllabus page, URL, McGraw-Hill Online Learning Center content, online exercises and quizzes, gradebook, discussion board, and an area for student Web pages.

PageOut requires no prior knowledge of HTML, no long hours of coding, and a way for course coordinators and professors to provide a full-course website. PageOut offers a series of templates—simply fill them with your course information and click on one of 16 designs. The process takes under an hour and leaves you with a professionally designed website. We'll even get you started with sample websites, or enter your syllabus for you! PageOut is so straightforward and intuitive, it's little wonder why over 12,000 college professors are using it. For more information, visit the PageOut website at www.pageout.net

The Online Learning Center can be delivered through any of these platforms:

McGraw-Hill Learning Architecture (TopClass)

Blackboard.com

Ecollege.com (formerly Real Education)

WebCT (a product of Universal Learning Technology)

McGraw-Hill has partnerships with WebCT and Blackboard to make it even easier to take your course online. Now you can have McGraw-Hill content delivered through the leading Internet-based learning tool for higher education.

At McGraw-Hill, we have the following service agreements with WebCT and Blackboard:

SimNet Concepts: This is the TOTAL solution for training and assessment in computer concepts. SimNet Concepts offers a unique graphic-intensive environment for assessing student understanding of computer concepts. It includes interactive labs for 77 different computer concepts and 160 corresponding assessment questions. The content menus parallel the contents of the McGraw-Hill text being used for the class, so students can cover topics for each chapter of the text you are using.

SimNet Concepts also offers the only truly integrated learning and assessment program available today. After a student has completed any SimNet Concepts Exam, he or she can simply click on one button to have SimNet assemble a custom menu that covers just those concepts that the student answered incorrectly or did not attempt. These custom lessons can be saved to disk and loaded at any time for review. *Assessment Remediation*, a new feature, records and reports what the student did incorrectly for each question on an exam that was answered incorrectly.

Microsoft Applications Manuals

The following list presents McGraw-Hill Microsoft Applications books that are available for use with *Using Information Technology*. For more information about these books, visit the McGraw-Hill Computer and Information Technology Supersite at www.mhhe.com/it or call your McGraw-Hill campus representative.

Windows Applications

| Advantage Series by Coulthard, Hutchinson, Miller, and Graves | |
|---|---|
| <i>Microsoft Office 2003</i> | Microsoft Office Word 2003 (Brief, Intro, Complete) Microsoft Office Excel 2003 (Brief, Intro, Complete) Microsoft Office Access 2003 (Brief, Intro, Complete) Microsoft Office PowerPoint 2003 (Brief, Intro) Microsoft Office System 2003 |
| <i>Microsoft Office XP</i> | Microsoft Word 2002 (Brief, Intro, Complete) Microsoft Excel 2002 (Brief, Intro, Complete) Microsoft Access 2002 (Brief, Intro, Complete) Microsoft PowerPoint 2002 (Brief, Intro) Microsoft Office XP Integrating and Extending Microsoft Office XP |
| <i>Microsoft Windows</i> | Microsoft Windows XP Microsoft Windows 2000 Microsoft Windows 98 |
| Professional Approach by Juarez, Carter, Stewart, Hinkle, et al. | |
| <i>Microsoft Office 2003</i> | Microsoft Office Word 2003 (Specialist, Comprehensive) Microsoft Office Excel 2003 (Specialist, Comprehensive) Microsoft Office Access 2003 (Comprehensive) Microsoft Office PowerPoint 2003 (Comprehensive) Microsoft Office System 2003 (Specialist) |
| <i>Microsoft Office XP</i> | Microsoft Word 2002 (Core, Expert) Microsoft Excel 2002 (Core, Expert) Microsoft Access 2002 (Core, Expert) Microsoft PowerPoint 2002 (Comprehensive) Microsoft Outlook 2002 (Core) |
| <i>Microsoft Windows</i> | Microsoft Windows XP |

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University of Nevada—Reno

Lynn Wermers
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