English for the Students Of Computers & IT
2nd Edition

by:
Hassan Rashidi (PhD)
Computers and Information Technology

Special English for Students of Computer and IT

2nd Edition- 2012

Hassan Rashidi(PhD)
Computers and information technology: special English for students of computer and IT.

موضوع:
- انگلیسی بان زبان

نویسندگان:
- رشیدی حسن
- رشیدی رشید

نشر:
- دانشگاه آزاد اسلامی
- اسلامی آزاد نشرگاهان

محصولات:
- 277 ص: مصور، جدول
- شاپک

فیزیک:
- وضعیت فهرست نویسی
- یادداشت

وضعیت ویرایش:
- قدرت و ازکار
- فهرست محتویات

شماره افزوده:
- 2000

قیمت:
- 6500 تومان

شماره کتابخانه ملی:
- 8351758

پست الکترونیک:
- spc@qiau.ac.ir
- www.qiau.ac.ir

مرکز فروش تهران: سیمای دانش‌شناسی، کیان رایانه، عادی، علم پوبی، دیانت

آدرس سایت:
- www.qiau.ac.irplit

کلیه حقوق چاپ و نشر برای ناشر محفوظ است

سخنران ملی/پژوهش: 208126742487

مرکز پخش: 8832488048

انتشارات ملی/پژوهش: 208126742487

پست الکترونیک:
- spc@qiau.ac.ir
Preface

This book is a concise textbook in Computers and Information Technology. It is designed as a reference book for the Senior Students of Computer and Information Technology, who want to learn the most important terminologies and concepts in the Special English course.

I have been teaching special English for Students of Computers and IT for several years in Universities in Iran. Many students have registered this course as a General Course to improve their average score. Some of them has complained that the course neither help them in teaching English nor learning technical information. They expressed that the today's references are out-of-date and do not support other courses. I had several discussions with my colleagues on teaching this course. The lecturers had the same opinions on the matter. Some students and lecturers asked for an up-to-date and off-the-shelf material to be prepared as a supporter of other courses.

I, therefore, decided to collect and codify information in this field to provide the students with the most important terminologies in computers and information technology. This book is structured into 12 chapters, which is designed to be taught in a semester. All chapters, except Chapter 6, are prepared into approximately the same size in number of pages so that each one could be taught in a week. Chapters 1 and 12 are organized into a shorter text. Since these chapters are taught at the
beginning and the finishing sessions of semester, they make some opportunities for assessment of students and answering their questions over the subjects discussed in the book, respectively. A couple of weeks may be considered adequate for teaching Chapter 6.

This book is focused on a limited set of concepts and terminologies, and explains their application in an Information Technology environment. It is assumed that students have some experience from passing the fundamentals of Computer and Programming and the advanced programming course.

It is suggested that the lecturers follow the subsequent guidelines for teaching this book:

- **Assessment:** The questions at the end of the first chapter can be used to assess the students’ basic knowledge of concepts in Computers and Information Technology.

- **Key Terminologies:** Each chapter is preceded by some key terminologies. The students must study these terminologies before teaching the material of each chapter. Although explaining some terminologies are necessary, it is not recommended that the lecturers spend too much time on the terminologies.

- **The End-Chapter Questions:** After teaching each chapter in a session/week, the students must answer the questions as homework. Their answers can be reviewed and checked by the lecturers at the beginning/end of next session/week. Answering some questions may need using the Internet.

- **Useful Web Sites:** Some useful Web Sites are provided at the end of the book. Depending on the level of students, lecturers may find some specific texts from the web sites for discussion with the students in the class.
I would be most grateful if students or lecturer would send me their suggestions over this material.

My Email Address:

hrashi@gmail.com

My Web Site:

http://atu-ir.academia.edu/HassanRashidi

http://qiau.ac.ir/rashidi.info
Many people have helped me in various ways in the preparation of this book. First of all, I am grateful to Dr. Mousakhani for his support. My thanks too to colleagues who have commented on this book at various stages of its development; in particular, Dr. Moeen, and Mr. Sepasmoghadam.

I would like to express my appreciation to my colleagues, Fatemeh Kiaee and Babak Bagheri, the editors in charge of this volume. I have had wonderful support from a number of people at Qazvin Islamic Azad University Publication: Mr. Zarei,.

Above all, my greatest thanks go to my family, for their patience, encouragement, and support while I was working on this book.
Table of Contents

Chapter 1: Introduction ......................................................... 1
  1.1 The Computer System .................................................. 1
  1.2 Working with Windows .................................................. 3
  1.3 Applications Software ................................................. 5
  1.4 Going Online .............................................................. 5
  1.5 Chapter Summary ......................................................... 8
  1.6 End-Chapter Questions .................................................. 8
    1.6.1 Multiple-Choice Questions ....................................... 8
    1.6.2 Fill-in-the-Blank Questions: ................................... 17
    1.6.3 Matching Questions ............................................... 19

Chapter 2: Global Village, Information Technology and Computers ................................................. 21
  Key Terminologies ............................................................. 22
  2.1 The Global Village: An Information Society ......................... 24
  2.2 Information Technology Competency .................................. 25
    2.2.1 What is Information Technology Competency? ................ 26
    2.2.2 IT Competency Assessment ...................................... 27
  2.3 The Challenge in the 21st Century .................................. 28
  2.4 Impact of Information Technology ..................................... 29
    2.4.1 Impact of IT: Today ............................................... 29
    2.4.2 Impact of IT: Future ............................................... 29
  2.5 From Personal Computers to Supercomputers ....................... 30
    2.5.1 Personal Computers: Up Close and Personal .................. 31
    2.5.2 Handheld Computers: A Computer in Hand is better than .... 34
    2.5.3 Workstations: Hot Rods ......................................... 34
    2.5.4 Server Computers: Corporate Workhorses ..................... 35
    2.5.5 Supercomputers: Processing Giants ............................ 36
    2.5.6 The Computer's Generations .................................... 36
  2.6 Computer System Capabilities ........................................ 37
    2.6.1 The Computer’s Strengths ....................................... 38
    2.6.2 Disadvantages of Computers .................................... 39
  2.7 Chapter Summary .......................................................... 41
  2.8 End-Chapter Questions .................................................. 41
    2.8.1 True/False Questions .............................................. 41
List of Figures

Figure 2-1: Computers are present in every aspect of our daily life- in the workplace, at home, and in the classroom. ................................................................. 26

Figure 2-2: Examples of common computer hardware components include a keyboard, mouse, microphone, scanner, digital camera, PC video camera, printer, monitor speakers, system unit, disk drives, USB flash drive, card reader/writer, and modem. ................................................................. 33

Figure 3-1: This Windows desktop shows a variety of icons and buttons, Start menu, and application window. ................................................................................. 56

Figure 4-1: Internet is a worldwide collection of networks that links together millions of business, governments, educational institutions, homes and individuals. ......................................................................................... 73

Figure 4-2: Common ways to access the Internet are through a regional or national ISP, an online service provider, a wireless service provider, or a local area network that is connected to an Internet host. ................................. 76

Figure 5-1: The system unit houses the motherboard (including the processor, memory and various expansions boards) and various storage devices. 95

Figure 5-2: Executing an instruction involves the fetching, decoding, executing, and storing steps that form a machine cycle. ................................................................. 97

Figure 5-3: The system unit has many ports that are interface to allow you to connect peripheral devices such as printer, mouse, or keyboard to the computer. ........................................................................................................ 99

Figure 6-1: A Comparison of different types of storage media and memory in terms of relative speed and uses. .......................................................... 114

Figure 6-2: Tracks form circles on the surface of a magnetic disk. The disk’s storage locations are divided into pie-shaped sections, which break the tracks into small arcs called sectors ................................................................. 117
List of Figures

**Figure 6-3:** How a laser reads data on an optical disc. ........................................ 120

**Figure 6-4:** The most popular types of mouse and point-and-draw devices......... 123

**Figure 7-1:** An example of sending a request over the Internet using a communications channel.............................................................. 144

**Figure 9-1:** In the relational model, all data elements are placed in tables. The Student table is linked to the Schedule table through the Student ID column. The Schedule table is linked to the Course table through the Course Code column................................................................. 185

**Figure 11-1:** The Data Flow Diagram shows the flow of data in a system. .......... 220

**Figure 11-2:** The Entity Relationship Diagram shows the relationships among entities in a system................................................................. 221
List of Tables

Table 2-1: A classification of the Computer Generations based on four features ... 37
Table 4-1: Some popular search engines ................................................................. 79
Table 5-1: The ASCII bit sting of commonly used characters ......................... 93
Table 5-2: A comparison of some of the more widely used processors .......... 101
Table 7-1: The transfer rates of various wireless transmission media .......... 147
Table 8-1: Some of The ACM (Association for Computing Machinery) code of Ethics ........................................................................................................ 162
Table 9-1: Measures to keep personal data private ........................................ 191
Table 12-1: The advantages and disadvantages of working at home .......... 239
Table 12-2: Some companies/institutes that offer certificates ..................... 242