

计 算 机 系 列 教 材

(第二版)

信息技术专业英语

主 编 江 华 圣



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序

近五年来,我国的教育事业快速发展,特别是民办高校、二级分校和高职高专发展之快、规模之大是前所未有的。在这种形势下,针对这类学校的专业培养目标和特点,探索新的教学方法,编写合适的教材成了当前刻不容缓的任务。

民办高校、二级分校和高职高专的目标是面向企业和社会培养多层次的应用型、实用型和技能型的人才,对于计算机专业来说,就要使培养的学生掌握实用技能,具有很强的动手能力以及从事开发和应用的能力。

为了满足这种需要,我们组织多所高校有丰富教学经验的教师联合编写了面向民办高校、二级分校和高职高专学生的计算机系列教材,分本科和专科两个层次。本系列教材的特点是:

(1) 兼顾了系统性和先进性。教材既注重了知识的系统性,以便学生能够较系统地掌握一门课程,同时对于专业课,瞄准当前技术发展的动向,力求介绍当前最新的技术,以提高学生所学知识的可用性,在毕业后能够适应最新的开发环境。

(2) 理论与实践结合。在阐明基本理论的基础上,注重了训练和实践,使学生学而能用。大部分教材编写了配套的上机和实训教程,阐述了实训方法、步骤,给出了大量的实例和习题,以保证实训和教学的效果,提高学生综合利用所学知识解决实际问题的能力和开发应用的能力。

(3) 大部分教材制作了配套的多媒体课件,为教师教学提供了方便。

(4) 教材结构合理,内容翔实,力求通俗易懂,重点突出,便于讲解和学习。

诚恳希望读者对本系列教材缺点和不足提出宝贵的意见。

编委会

2008年8月8日

前言

随着科学技术的飞跃发展,信息技术(IT)又受到迅速崛起的资讯技术(ST)的挑战。因特网及计算机网络技术的突飞猛进,又大大促进了全球资讯行业的发展。某权威人士预言:“ST will be the next growth Technology coming after IT.”一种以PC网络技术为基础、3e-技术为核心的发展趋势正在形成。为此,学习一定的英语基础知识,掌握专业英语的特点,对学习电子信息技术、计算机科学的大学生尤其重要。本教程共有16个单元,课文全部选自美、英原文科普读物,课文包括了信息技术、计算机网络知识及编程语言、数字通信、光通信等专业知识,阅读材料取材丰富,包括网络通信、网络管理、无线电通信等最新技术。全书课文浅显易懂,语言生动活泼,适合信息类相关专业的大学生学习。在大力倡导素质教育的今天,该教材正适合大学分校、独立学院学生及各类工程技术人员学习信息技术专业英语的需要。

为帮助信息技术专业的技术人员学习和了解信息系统基础英语知识,本书选编了“An overview of what make up an information system: people, procedure, software, hardware and data”和部分考题供读者自我测试使用。书后附录编写了全书词汇、专业术语、常用缩略语和网络用语,并收录常用计算机屏幕英语提示信息 and 最新信息技术英语词汇,可供读者查阅。

书后编有全部课文参考译文,以便使用本教材的教师备课和组织教学活动,又为学生提供较规范的语言样板,启发思路,便于模仿、实践和运用。

本书第二版选材全部来自原版材料,考虑到信息技术的飞速发展和学生英语水平的逐年提高,本次修订编者在第一版的基础上对书中的课文和阅读材料进行了必要的补充和更新,增加了专业英语的阅读理解、翻译和专业英语的基本写作知识和自我测试题的内容。全书第二部分附有课文参考译文和计算机软件人员水平考试中的专业英语试题解析,知识覆盖面宽,并注意题材的新颖性和多样性,自我测试题前补充了计算机软件人员水平考试中的专业英语试题解析,通俗易懂,可供广大计算机软件人员参考。

本书第二版由武汉科技大学中南分校江华圣主编。

本书在选材时,参考了国内外有关书籍和资料,在此向这些作者致以谢意。

由于信息技术发展日新月异,新的知识在不断扩展更新,加上编者的学识和水平有限,书中疏漏、错误之处在所难免,敬请广大读者不吝批评指正。

编者

2010年5月于

武汉科技大学中南分校

CONTENTS

Part One

Unit 1	3
Part A	TEXT The Career of Information Technology Graduates3
Reading Material A	The ENIAC.....6
Reading Material B	CAREERS in IT7
Part B	Interpretation of Carrier English7
Unit 2	9
Part A	TEXT Java Language.....9
Reading Material A	What is Java?..... 12
Reading Material B	Java and Java Script..... 13
Part B	Interpretation of Science and Technology Terminology 17
Test Yourself I	19
Unit 3	23
Part A	TEXT The Buyer's Guide (1) 23
Reading Material A	How to Buy a Home Computer (1) 26
Reading Material B	How to Buy a Home Computer (2) 28
Part B	Introduction of Reading Skill 29
Unit 4	32
Part A	TEXT The Buyer's Guide (2) 32
Reading Material A	How to Buy A Home Computer (3) 36
Reading Material B	Suggestions for Buyers..... 38
Part B	Expressions of Passive Voice 39
Test Yourself II	41
Unit 5	45
Part A	TEXT Plug and Play..... 45
Reading Material A	Introduction of Microsoft Certification Program 47
Reading Material B	Microsoft Certifications..... 48
Part B	Text Format of Career English..... 50

Unit 6	54
Part A	TEXT Two Main Asynchronous Communication Methods in Cyberspace 54
Reading Material A	Controversial Visions on Cyberspace 57
Reading Material B	Two Synchronous Communications Based on Text 59
Part B	Expressions of Numbers and Quantity 60
Test Yourself III	62
Unit 7	67
Part A	TEXT Newsgroups 67
Reading Material A	IP Telephony 69
Reading Material B	FTP 71
Part B	Basic Translation Techniques 72
Unit 8	78
Part A	TEXT Web's Next Battle: Instant Messaging 78
Reading Material A	Instant Messaging Guide 80
Reading Material B	ICQ 82
Part B	Writing Skill (1) Classifying 84
Test Yourself IV	86
Unit 9	90
Part A	TEXT How Computer Viruses Spread 90
Reading Material A	Types of Computer Viruses Infection 92
Reading Material B	Trojans and Worms 94
Part B	Writing Skill (2) Defining 95
Unit 10	97
Part A	TEXT The Next Net 97
Reading Material A	The Merging of Man & PC in 21st Century 100
Reading Material B	Net Impact: So Far So Good 101
Part B	Writing Skill (3) Exemplifying 102
Test Yourself V	104
Unit 11	106
Part A	TEXT Digital signal processors and its applications 106
Reading Material A	Speech synthesis 110
Reading Material B	Speech Recognition 112
Part B	Writing Skill (4) Reporting 113



Unit 12	115
Part A TEXT Modern Role of Cryptography	115
Reading Material A An Initial Hint on Foundations of Cryptography	120
Reading Material B Basis of Information Security: More Than Computational Intractability	120
Part B Writing Skill (5) Describing	121
Test Yourself VI	123
 Unit 13	126
Part A TEXT Communication Network	126
Reading Material A Future Network Architectures and Their Services	129
Reading Material B Key Factors in Communication Network Evolution	131
Part B Writing Skill (6) Predicting	133
 Unit 14	135
Part A TEXT Signal and System	135
Reading Material A Overview of Specific Systems (1)	140
Reading Material B Overview of Specific Systems (2)	141
Part B Writing Skill (7) Comparing	142
Test Yourself VII	144
 Unit 15	149
Part A TEXT Introduction of ISDN	149
Reading Material A Broadband ISDN	151
Reading Material B Network Management	154
Part B Writing Skill (8) Cause and Effect	156
 Unit 16	158
Part A TEXT Characteristics of Communication Channels	158
Reading Material A Digital Radio-relay Systems	162
Reading Material B Using a Mouse	164
Part B Writing Skill (9) Application Examples	166
 期末测试	176
 Part Two	
一、参考译文	181
二、计算机软件人员水平考试部分试题解析	201
Appendix I “An overview of what make up an information system: people procedure, software, hardware and data”	208

Appendix II	Vocabulary.....	214
Appendix III	Glossary.....	226
Appendix IV	The following is a list abbreviations which appear in the text.....	233
Appendix V	Abbreviations for Network.....	235
Appendix VI	New Words and Expressions for Electricity Electronics and IT.....	247
参考文献		303

Part One





Unit 1

Part A

TEXT

The Career of Information Technology Graduates

Basically, information technology is the study of digital computer systems and their use in a wide range of areas. In all such applications, the role of the computer is to process data or information and solve problems. In solving these problems, computers rely on algorithms, which are communicated to them through specially designed programming languages, the central core of information technology involves a study of programming languages, algorithms and information structures. Algorithms and programming languages are usually studied separately. However, when combined with the study with systematic methods for the design and implementation of computer programs or software, they form the basis of software engineering. Information structures are the basic of all information processing systems. Large scale information processing systems use databases for the storage, retrieval, updating and protection of information. Information systems analysis and design is concerned with the use of databases to organize and make available the information required on specific applications. It is also concerned with the interaction between these systems and the organizations which use them. Information technology also includes the study of the basic computer operating systems on which applications can be constructed. Operating systems are complex programs permanently resident in the computer whose function is to control the running of all user programs and to allocate the computer's resources to them. Special purpose programs made available via operating systems include compilers, editors and other tools, which enable the construction and the use of application software. Computer architecture is concerned with the design of computers and their hardware components such as adders, counters, memory, processors and peripherals. Communication is an increasingly important aspect of computer science. The field of computer networks deals with communication between machines, the human-computer interface deals with communication between machines and people. Finally, the effective use of computer-based systems depends on a clear understanding of their underlying theoretical capabilities and limitations. Information technology therefore

includes the theory of computation, programs, programming languages and algorithms , as well as practical organization skills necessary for their use.

In our lifetime they have altered the way we think about education, the way we do business, the way we communicate, the way we view ourselves and the world, and even the way we see our future. Communications and information technology offer you one of the most diverse and flexible career paths of almost any industry. It is one of the fastest growing areas of technology in the world today. Use of computers is now almost universal and society has become dependent on computer-based information systems for a diverse range of critical tasks. These include the storage and distribution of information in industry, commerce and government. Information Technology graduates are employed in the development and maintenance of such systems as programmers, analysts, consultants, and computer systems and software engineers. Honors and higher degree graduates (Masters and PhD) are employed in teaching or the research leading to new application areas and development tools, such as programming languages, operating systems and computers.

Words and Expressions

1. algorithm n. 算法
2. core of information technology 信息技术核心
3. programming language 程序设计语言
4. information structure 信息结构
5. systematic adj. 系统的
6. software engineering 软件工程
7. retrieval adj. (数据)检索
8. interaction n. 交互作用
9. resident in 驻留在
10. allocate vt. 分配, 指定、定位
11. compiler n. 编译程序
12. editor n. 编辑程序, 编辑器
13. architecture n. 体系结构
14. adder n. 加法器
15. counter n. 计数器
16. human-computer interface 人机接口
17. underlying adj. 基础的, 根本的
18. computation n. 计算(结果)
19. diverse adj. 不同的, (各种) 各样的, 变化多的
20. critical adj. 关键性的
21. consultant n. 顾问, 查阅者
22. honors n. 成绩优秀者, 优等生



Notes

1. Algorithms and programming languages are usually studied separately.

译文：通常算法和程序设计语言是分开进行研究的。

2. be concerned with

涉及

3. Operating systems are complex programs permanently resident in the computer whose function is to control the running of all user programs and to allocate the computer's resources to them.

专业英语中的长句一般可以断为两句来翻译。此句可从 whose function...前断开为另一句。

译文：操作系统是计算机中长期驻留的复杂的程序，其功能是控制所有用户程序的运行并给它们分配计算资源。

4. Special purpose programs made available via...

专用程序通过……成为可能

如：The VLSI made computer downsizing available.

超大规模集成电路使计算机小型化成为可能。

5. Computer-based systems

计算机辅助系统

计算机辅助系统一般指 CAD 计算机辅助设计、CAI 计算机辅助教学、CAM 计算机辅助制造等。

6. Information: Data that has been processed by a computer system.

信息：经计算机处理过的数据。

7. hardware: Equipment that includes a keyboard, monitor, printer, the computer itself and other devices.

硬件：包括键盘、监视器、打印机、计算机和其他的设备。

8. software: computer program.

软件：计算机程序。

9. operating system: software that interacts between application software and the computer.

The OS handles such details as running programs, storing data and programs, and processing data.

操作系统：在应用软件和计算机之间相互作用的软件。操作系统处理诸如运行程序、储存数据和程序以及正在处理的数据。

Exercise

1. Translate the following passages and sentences.

- (1) an open network
- (2) internet computer
- (3) download small applets and files from server
- (4) spell checking, fancy fonts and graphics
- (5) fuel much of the new PC demand
- (6) access to networks

- (7) connect your network with PC
 (8) Most PCs did not take full advantage of and also expensive
2. 从供选择的答案中, 选出应填入下面空白处的最确切的答案, 把相应编号写在答卷的对应栏内。

Computer systems on the low A of the B scale are called microcomputer or minicomputers. Microcomputers or C computers are the small general-purpose systems. But they may perform the same operation as much D computers. Minicomputers are also small general-purpose systems. They are typically more powerful and expensive than micros, although the performance of some newer micros may E the capabilities of some older minis.

- A: ①and ②end ③send ④tend
 B: ①length ②width ③height ④size
 C: ①personal ②person ③private ④port
 D: ①large ②larger ③small ④smaller
 E: ①pass ②bypass ③surpass ④topass

Reading Material A

The ENIAC

The ENIAC cost \$500,000, weighed 60,000 pounds, and occupied the floor space of a large single-family house. The vacuum tubes similar to the once in old-fashioned radios handled its communications and formed the key building blocks of its high-speed electronic switches that could be turned "on" and "off" rapidly in response to electronic signals flowing from other parts of the computer.

By the standards of its day the ENIAC was remarkably fast. When it works properly, the ENIAC can add 5,000 pairs of eight-digit numbers in one second. It is more than 1,600 times faster than its nearest competitor—which has been in use for only about two years. By one estimate the ENIAC can do the work of 7,000 engineers.

The ENIAC was a power-hungry machine. Some contemporary accounts indicate that, whenever it was switched on, the street lights in Philadelphia dimmed temporarily. It was also clumsy and unreliable. Once a day, on average, one of its 17,000 vacuum tubes burned out thus spoiling the machine's computation. When this happened, the technicians had to tear down the computer's circuits to locate and replace the offending component. A famous scientist of the day once estimated that "If we tried to build a computer 10 times as large, it would never complete a solution before a tube failure would spoil the results". Actually, machines with large number of tubes did not turned out to be possible, but there were definite limits to their size and complexity.



Words and Expressions

ENIAC= Electronic Numerical Integrator and Calculator

美国宾夕法尼亚大学的 J. W. Mauchly 和 J. P. Eckert 于 1946 年制造成功的世界上第一台数字电子计算机。

Reading Material B

CAREERS in IT

Webmaster: Develops and maintains Websites and Web resources.

Computer support Specialist: Provides technical support to customers and other users.

Technical writer: Prepares instruction manuals technical reports, and other scientific or technical documents.

Software engineer: Analyzes users' needs and creates application software.

Network administrator: Creates and maintains computer networks.

Database administration: Uses database management software to determine the most efficient ways to organize and access data.

systems analyst: Plans, designs, and maintains information systems.

Programmer: Creates, tests, and troubleshoot computer programs.

Part B

Interpretation of Carrier English

专业英语翻译简介

专业英语翻译是指把科技文章由原作语言 (source language) 用译文语言 (target language) 忠实、准确、严谨、完整地再现出来的一种语言活动, 它要求翻译者在具有一定专业基础知识 (the knowledge of your major) 和英语技能的前提下, 借助于一本合适的英汉科技字典 (a dictionary for science and technology) 来完成整个翻译过程。专业翻译直接应用于科技和工程, 因而对翻译的质量具有极高的要求, 翻译上的失之毫厘, 工程中就有可能差之千里, 造成巨大的损失。

翻译标准是评价译文质量的尺度, 综合起来有以下三点:

第一, 翻译首先要做到忠实、准确, 要“信”, 在表达上保持原作的风格和文体。例如:

The importance of computer in the use of digital communication can not be overestimated.