高等学校培养应用型人才教材——计算机系列

实用计算机英语

邓凯　顾剑柳　主编
施梅芳　高佳琴　苏频　副主编
王一曙　主审

中国电力出版社
www.infopower.com.cn

高等学校培养应用型人才教材——计算机系列

实用计算机英语

邓凯　顾剑柳　主编
施梅芳　高佳琴　苏频　副主编
王一曙　主审

中国电力出版社

内 容 提 要

本书是一本实用性很强的专业英语教材，采用了全新的编写体系。本书的目的旨在帮助读者掌握一定的计算机英语专业词汇并具备一定的计算机英语阅读及翻译能力，通过对本教材的学习，使读者在学习计算机的过程中能更好地理解相关的英文信息和资料，了解计算机发展的历史和最新趋势，掌握国际前沿的计算机应用知识。

本书可作为计算机专业学生的专业基础课教材，也可供广大技术人员以及计算机爱好者阅读。

图书在版编目（CIP）数据

实用计算机英语 / 邓凯，顾剑柳主编. —北京：中国电力出版社，2003
高等学校培养应用型人才教材. 计算机系列
ISBN 7-5083-1396-8

Ⅰ. 实... Ⅱ. ① 邓... ② 顾... Ⅲ. 电子计算机－英语－高等学校－教材 Ⅳ. H31

中国版本图书馆 CIP 数据核字（2003）第 000558 号

中国电力出版社出版、发行
（北京三里河路 6 号 100044 http://www.infopower.com.cn）
汇鑫印务有限公司印刷
各地新华书店经售

*

2003 年 2 月第一版 2003 年 9 月北京第二次印刷
787 毫米×1092 毫米 16 开本 13 印张 317 千字
印数：5001-8000 册 定价 **18.00** 元

高等学校培养应用型人才教材——计算机系列

编 委 会

序　言

进入21世纪，世界高等教育已从精英教育走向了大众教育。我国也适应这一潮流，将高等教育逐步推向大众化。培养应用型人才已成为国家培养国际人才的重要组成部分，且得到了社会各界的广泛支持。于是一大批有规模、有实力、规范化、以培养应用型人才为己任的高等学校得到了长足发展。这类高校办学的一个显著的特点是按照新时代需求和当地的需要来培养学生，他们重视产学研相结合，并紧密地结合当地经济状况，把为当地培养应用型人才作为学校办学的主攻方向。

这类学校的教学特点是：在教授“理论与技术”时，更注重技术方法的教学。在教授“理论与实践”时，更注重理论指导下的可操作性，更注意实际问题的解决。因此，这些学生善于解决生产中的实际问题，受到地方企事业单位的普遍欢迎。

为满足这类高校的教学要求，达到培养应用型人才的目的，根据教育部有关重点建设项目的要求和相关教学大纲，我们组织了多年在这类高校中从教，并具有丰富工程经验的资深教授、高级工程师、教师来编写这套教材。

在这套教材的编写中，我们提倡“实用、适用、先进”的编写原则和“通俗、精练、可操作”的编写风格，以解决多年来在教材中存在的过深、过高且偏离实际的问题。

实用——本套教材重点讲述本行业中最广泛应用的知识、方法和技能。使学生学习后能胜任岗位工作，切实符合当地经济建设的需要和社会需要。

适用——本套教材是以工程技术为主的教材，所以它适用于培养应用型人才的所有高校（包括本科、专科、技术学院、高职等），既符合此类学生的培养目标，又便于教师因材施教。

先进——本套教材所选的内容是当今的新技术、新方法。使学生在掌握经典的技术和方法之后，可用教材中的新技术、新方法去解决工程中的技术难题，为学生毕业后直接进入生产第一线打下坚实的基础。

通俗——本套教材语言流畅、深入浅出、容易读懂。尽量避开艰深的理论和长篇的数学推导，尽量以实例来说明问题，在应用实例中掌握理论，使学生轻松掌握所学知识技能，达到事半功倍的效果。

精练——本套教材选材精练。详细而不冗长，简略得当，对泛泛而谈的内容将一带而过，对学生必须掌握的新技术、新方法详细讲，讲透、讲到位，为教师创造良好的教学空间和结合当地情况调整教学内容的余地。

可操作——本套教材所有的实例均是容易操作的，且是有实际意义的案例。把这些案例连接起来，就是一个应用工程的实例。通过举一反三的应用，使学生能够在更高层次上创造性地应用教材中的新思想、新技术、新方法去解决问题。

本套教材面向培养应用型人才的高等学校，同时亦可作为社会培训高级技术人才的教材和需要加深某些方面知识技能的人员的自学教材。

编　委　会

前　言

随着时代的发展，计算机已渗透到人们工作和生活的方方面面。计算机英语也随之成为一门独立的专业英语课程，并在计算机应用中扮演着重要的角色，甚至可以说一个人的计算机英语程度决定了他的计算机应用水平。本书的目的旨在帮助读者掌握一定的计算机英语专业词汇并具备一定的计算机英语阅读及翻译能力，通过对本教材的学习，使读者在学习计算机的过程中能更好地理解相关的英文信息和资料，了解计算机发展的历史和最新趋势，掌握国际前沿的计算机应用知识。

本书是一本实用性很强的专业英语教材，采用了全新的编写体系。

- 词汇：突出了专业英语词汇及词缀特点；
- 语法：突出专业英语语法特点，主要针对复杂句成分的分析和专业英语翻译的一般方法；
- 课文：全部采用英文原版实例和常见的英文提示，注重实际应用，并从易学易用着手，注重对学生创新能力的培养。课文中图文并茂，以帮助读者理解。
- 练习：为帮助提高学习者的翻译与阅读理解能力，课后练习加入了一些词汇和语法练习以巩固所学内容。
- 附录：书后有参考译文和缩略词表，供读者对照、查阅。

全书共分 6 章。内容包括计算机简介、 计算机硬件、 计算机软件、 计算机网络、计算机的应用及计算机方面的阅读材料等，几乎覆盖了当今计算机技术的所有领域。

本书由邓凯副教授和顾剑柳老师主编。第 1 章由顾剑柳编写，第 2 章由邓凯编写，第 3 章由施梅芳编写，第 4 章由高佳琴编写，第 5 章由苏频编写，第 6 章由顾剑柳编写。全书由邓凯、顾剑柳统稿。在编写过程中，得到了许多专家和读者的热忱鼓励，电力出版社给予了大力支持，在此表示衷心感谢！

本书可作为计算机专业学生的专业基础课教材，也可供广大技术人员以及计算机爱好者阅读。

由于作者水平有限，书中难免有不当之处，敬请读者批评指正。

作　者

目　录

Chap 1 Introduction of Computers

1.1 Types of Computers

(I) Words and Phrases:

prerecord	*vt.*	预先录下
transistor	*n.*	[电子]晶体管
special-purpose computer		专用计算机
general-purpose computer		通用计算机
memory	*n.*	存储器, 内存
retain	*vt.*	保持，保留
input device		输入设备
conduit	*n.*	管道，导管
output device		输出设备
central processing unit（CPU）		中央处理器
bus	*n.*	总线
transmit	*vt.*	传输，转送
supercomputer	*n.*	超级计算机
mainframe	*n.*	大型机
minicomputer	*n.*	小型机
microcomputer	*n.*	微型机
keep track of	*v.*	明了
deposit	*n.*	存款，押金，保证金

(II) Text:

A programmable machine. The two principal characteristics of a computer are:

It responds to a specific set of instructions in a well-defined manner[①].

It can execute a prerecorded list of instructions (a program).

Modern computers are electronic and digital. The actual machinery—wires, transistors, and circuits—is called hardware; the instructions and data are called software.

There are two basic categories of computers, special-purpose and general purpose. Special-purpose computers are preprogrammed to perform a specific task, such as injecting fuel in an automobile engine, keeping time in a digital watch, or programming a videocassette recorder. General-purpose computers can be adapted to perform any number of functions. Most computers you have read about are general-purpose computers. All general-purpose computers require the

following hardware components:

memory: Enables a computer to store, at least temporarily, data and programs.

mass storage device: Allows a computer to permanently retain large amounts of data. Common mass storage devices include disk drives and tape drives.

input device: Usually a keyboard and mouse, the input device is the conduit through which data and instructions enter a computer.

output device: A display screen, printer, or other device that lets you see what the computer has accomplished.

central processing unit (CPU): The heart of the computer, this is the component that actually executes instructions.

In addition to these components, many others make it possible for the basic components to work together efficiently. For example, every computer requires a bus that transmits data from one part of the computer to another.

Computers come in four main sizes:

1. supercomputers
2. mainframes
3. minicomputers
4. microcomputers

Supercomputers are the largest and fastest. They are used for large projects such as national or global weather forecasting, satellite tracking, etc. Mainframe computers are very powerful and can be as large as an entire room. They are used, for example, by banks to keep track of millions of checks and deposits, by airlines to schedule thousands of flights and make seat reservations, and by governments to keep track of their citizens. Mainframes usually have terminals connected to them. A terminal consists of a monitor and keyboard that allow a person to enter information and retrieve it from the computer. Minicomputers are smaller and sometimes used in medium-size companies to run their manufacturing plants or keep track of inventories. They also have terminals attached to them. Microcomputers or personal computers are the smallest computers, designed to be used by individuals for writing, illustrating, budgeting, playing games, and communicating with other computers②.

(III) Notes:

① "in a manner" 表示有几分，有点儿，在某种意义上。

② "designed to …" 是过去分词短语，作句中 "the smallest computers" 的定语。

(IV) Exercises:

1. Decide whether each of the following statements is true or false according to the text:

1) Special-purpose computers can be adapted to perform any number of functions.

2) Supercomputers are used for large projects such as national or global weather forecasting,

satellite tracking, etc.

3) Supercomputers usually have terminals connected to them.

4) Minicomputers are sometimes used in medium-size companies to run their manufacturing plants or keep track of inventories.

5) All general-purpose computers require the following hardware components: memory, mass storage device, input device, output device and CPU etc.

2. Multiple Choice:

1) _____dogs don't always bite.

A. Barked B. Barking C. Bark D. To bark

2) They sat on the top of the hill and watched the _____ sun.

A. setting B. set C. sat D. seted

3) The _____ team slowly left the field.

A. defeat B. defeating C. being defeated D.defeated

4) Many people of the world do not have _____ literature.

A. write B. written C. wrote D. writing

5) The _____ project was a great success.

A. completed B. to be completed C. completing D. complete

3. Reading Materials:

The PC's success

The PC came out in 1981. In less than 20 years, it has totally changed our means of communicating. When the PC was introduced by IBM, it was just one of many different micro data processors. However, the PC caught on. In 5—7 years, it conquered the market. From being an IBM compatible PC, it became the standard.

If we look at early PCs, they are characterized by a number of features. Those were instrumental in creating the PC success.

The PC was from the start standardized and had an open architecture.

It was well documented and had great possibilities for expansion.

It was inexpensive, simple and robust (definitely not advanced).

The PC started as IBM's baby. It was their design, built over an Intel processor (8088) and fitted to Microsoft's simple operating system MS-DOS.

Since the design was well documented, other companies entered the market. They could produce functionable copies (clones) of the central system software (BIOS). The central ISA bus was not patented. Slowly, a myriad of companies developed, manufacturing IBM compatible PCs and components for them.

The Clone was born. A clone is a copy of a machine. A machine, which can do precisely the same as the original. Some of the components (for example the hard disk) may be identical to the original. However, the Clone has another name (Compaq, Olivetti, etc.), or it has no name at all. This is the case with "the real clones". Today, we differentiate between:

Brand names, PCs from IBM, Compaq, AST, etc. Companies which are so big, so they develop their own hardware components.

Clones, which are built from standard components. Anyone can make a clone.

Since the basic technology is shared by all PCs, I will start with a review of that.

Translate the following into Chinese:

（1）The Clone was born. A clone is a copy of a machine. A machine, which can do precisely the same as the original. Some of the components (for example the hard disk) may be identical to the original. However, the Clone has another name (Compaq, Olivetti, etc.), or it has no name at all. This is the case with "the real clones". Today, we differentiate between:

（2）Brand names, PCs from IBM, Compaq, AST, etc. Companies which are so big, so they develop their own hardware components.

Clones, which are built from standard components. Anyone can make a clone.

Questions:

（1）What led to the PC's success?

（2）Where was the PC born?

1.2 Computer Generations

（I）Words and Phrases:

vacuum tube	*n.*	〈美〉真空管，电子管
integrated circuit		集成电路
miniaturize	*vt.*	使小型化
semiconductor chip		半导体芯片
silicon	*n*	[化]硅，硅元素
considerably	*ad.*	相当地
printed circuit board		印刷电路板
bakelite	*n.*	胶木
fiberglass	*n.*	玻璃纤维，玻璃丝
mother board		母板
microprocessor	*n.*	微处理器
trigger	*vt.*	引发，引起，触发
kit	*n.*	成套工具，用具包，工具箱

（II）Text:

The First Generation: 1946—1958 (The Vacuum Tube Years)

The first generation computers were huge, slow, expensive, and often undependable. In 1946

two Americans, Presper Eckert, and John Mauchly built the ENIAC electronic computer which used vacuum tubes instead of the mechanical switches of the Mark I. The ENIAC used thousands of vacuum tubes, which took up a lot of space and gave off a great deal of heat just like light bulbs do①. The ENIAC led to other vacuum tube type computers like the EDVAC (Electronic Discrete Variable Automatic Computer) and the UNIVAC I (UNIVersal Automatic Computer).

The Second Generation: 1959—1964 (The Era of the Transistor)

The transistor computer did not last as long as the vacuum tube computer lasted, but it was no less important in the advancement of computer technology②. In 1947 three scientists, John Bardeen, William Shockley, and Walter Brattain working at AT&T's Bell Labs invented what would replace the vacuum tube forever. This invention was the transistor which functions like a vacuum tube in that it can be used to relay and switch electronic signals.

The Third Generation: 1965—1970 (Integrated Circuits—Miniaturizing the Computer)

Transistors were a tremendous breakthrough in advancing the computer. However no one could predict that thousands even now millions of transistors (circuits) could be compacted in such a small space. The integrated circuit, or as it is sometimes referred to as semiconductor chip, packs a huge number of transistors onto a single wafer of silicon. Robert Noyce of Fairchild Corporation and Jack Kilby of Texas Instruments independently discovered the amazing attributes of integrated circuits. Placing such large numbers of transistors on a single chip vastly increased the power of a single computer and lowered its cost considerably.

Since the invention of integrated circuits, the number of transistors that can be placed on a single chip has doubled every two years, shrinking both the size and cost of computers even further and further enhancing its power. Most electronic devices today use some form of integrated circuits placed on printed circuit boards—thin pieces of bakelite or fiberglass that have electrical connections etched onto them—sometimes called a mother board.

These third generation computers could carry out instructions in billionths of a second. The size of these machines dropped to the size of small file cabinets. Yet, the single biggest advancement in the computer era was yet to be discovered.

The Fourth Generation: 1971—Today (The Microprocessor)

This generation can be characterized by both the jump to monolithic integrated circuits(millions of transistors put onto one integrated circuit chip) and the invention of the microprocessor (a single chip that could do all the processing of a full-scale computer). By putting millions of transistors onto one single chip more calculation and faster speeds could be reached by computers. Because electricity travels about a foot in a billionth of a second, the smaller the distance the greater the speed of computers.

However what really triggered the tremendous growth of computers and its significant impact on our lives is the invention of the microprocessor③. Ted Hoff, employed by Intel (Robert Noyce's new company) invented a chip the size of a pencil eraser that could do all the computing and logic work of a computer. The microprocessor was made to be used in calculators, not

computers. It led, however, to the invention of personal computers, or microcomputers④.

It wasn't until the 1970's that people began buying computer for personal use. One of the earliest personal computers was the Altair 8800 computer kit. In 1975 you could purchase this kit and put it together to make your own personal computer. In 1977 the Apple II was sold to the public and in 1981 IBM entered the PC (personal computer) market.

Today we have all heard of Intel and its Pentium® Processors and now we know how it all got started. The computers of the next generation will have millions upon millions of transistors on one chip and will perform over a billion calculations in a single second. There is no end in sight for the computer movement.

(III) Notes:

① 本句是一个省略句，“do”与前面的“gave off a great deal of heat”是相同的意思。

② 此句中“no less important”后面省略了“than the vacuum tube computer”，it 指代“the transistor computer”。“no less than”的意思是“不少于”，“not less than”的意思是“至少”。例如：There were no less than a thousand people at the meeting. 译为：到会的有一千人之多；而 There were not less than one thousand people at the meeting. 译为：到会的至少有一千人。

③ 本句中“what really…on our lives”是一个主语从句。

④ 本句正常的语序应为 However, it led to the invention of personal computers, or microcomputers. 句中“led to”是一个词组，译为引导、指引，“however”的意思是然而、可是，这里的语气不是很强烈。

(IV) Exercises:

1. Fill in blanks according to the text:

1) The ENIAC used thousands of ____, which took up a lot of space and gave off a great deal of heat just like light bulbs do.

2) In 1947 three scientists, John Bardeen, William Shockley, and Walter Brattain working at ____invented the transistor computer.

3) Most electronic devices today use some form of ____ placed on printed circuit boards.

4) The fourth generation computers can be characterized by both the jump to ____ and the invention of ____.

5) ____led to the invention of personal computers, or microcomputers.

2. Translate the following sentences into Chinese:

1) How he managed to finish the job is of interest to us all.

2) My opinion is that he will not agree.

3) I know that he is friendly and hospitable.

4) Knowing that it was going to rain, they decided to work inside the house.

5) Who did the work is unknown.

3. Reading Materials:

Three Components of Effective Computer Use

Many schools are spending hundreds of thousands of dollars on technology equipment. But is that equipment being used well? Moreover, the world is changing rapidly and students are leaving schools unprepared for the information age. The following information suggests a simple model for making the most of your current technologies and planning for future purchases.

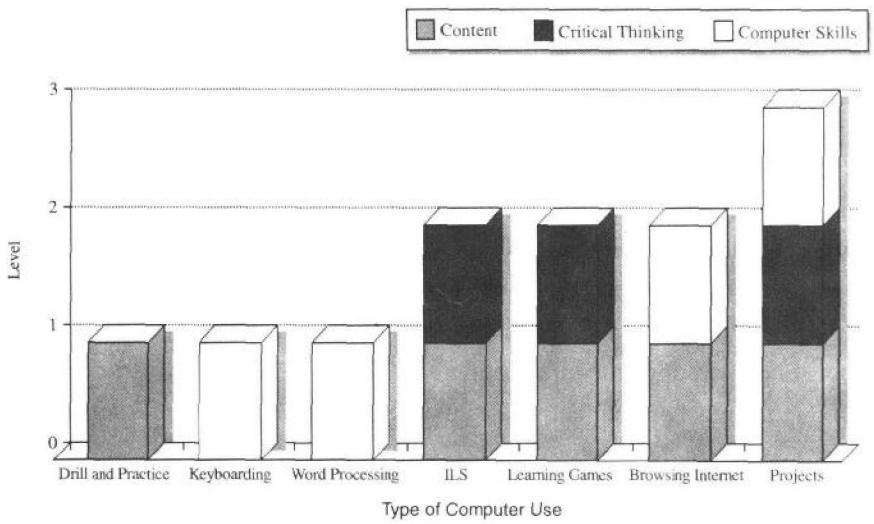
The three components (3Cs) of Effective Computer Use:

Content: Students should gain content knowledge while working at the computer.

Critical Thinking: Students should be engaged in higher level thinking and developing those skills while they are using the computer.

Computer Skills: Students should gain technical skills while they are working at the computer. Note—moving and clicking the mouse is not considered a computer skill. Computer skills include things like keyboarding, formatting text, inserting graphics, cutting and pasting, recording sounds, creating animations and special effects, etc.

Common Computer Uses:



Explanation of Chart:

Common computer uses are charted according to which of the components they utilize.

ILS and **Learning Games**: With a good integrated learning system or learning game, students can learn **content** and develop **critical thinking.**

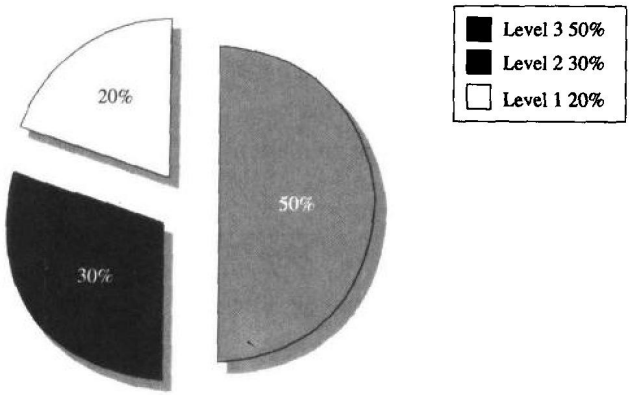
Drill and Practice: Students may learn **content** while using drill and practice software.

Keyboarding and Word Processing: Students need to learn these valuable **computer skills.** However, these skills can effectively be taught using inexpensive keyboards designed for this purpose (Alpha Smart, Dream Writer, etc.). This will free computers for more productive uses.

Internet: While browsing the Internet, students can gain **content** knowledge and can gain some **computer skills** (effective search strategies). It is entirely possible though, that without a specific purpose for browsing, students may not gain either.

Projects: Through well-designed integrated projects, students can gain **content**, apply **critical thinking**, and develop **computer skills**.

Levels of usage	Recommended usage of computers in classrooms and labs
Level 3: includes all 3 components (Content, Critical Thinking, Computer Skills).	50% of time and money should be spent on Level 3 applications.
Level 2: includes any 2 components.	30% of time and money should be spent on Level 2 applications.
Level 1: includes 1 component.	20% of time and money should be spent on Level 1 applications.



Translate the following paragraphs into Chinese:

（1）Many schools are spending hundreds of thousands of dollars on technology equipment. But is that equipment being used well? Moreover, the world is changing rapidly and students are leaving schools unprepared for the information age. The following information suggests a simple model for making the most of your current technologies and planning for future purchases.

（2）

Computer Skills: Students should gain technical skills while they are working at the computer. Note—moving and clicking the mouse is not considered a computer skill. Computer skills include things like keyboarding, formatting text, inserting graphics, cutting and pasting, recording sounds, creating animations and special effects, etc.

Writing:

For this part, you are allowed thirty minutes to write a composition. You should write at least 120 words and you should base your composition on the chart named common computer uses in the text.

Chap 2 Computer Hardware

2.1 Organization of Computer System Components

(I) Words and Phrases:

magical	*a.*	有魔力的；不可思议的
appropriately	*ad.*	适当地
nonetheless	*ad.*	虽然如此，但是
classification	*n.*	分类，分级；分类法
category	*n.*	种类，类别
graphic	*n.*	图形
merely	*ad.*	仅仅，只不过
temporary	*a.*	暂时的，临时的
permanent	*a.*	永久的，耐久的
internal	*a.*	内部的；本国的
neglect	*v.*	疏忽，忽略，大意
bombard	*v.*	轰击，攻击，炮轰
sophisticated	*a.*	老练的；复杂的，精密的
be opposed to		反对，与……相对
for instance		例如
primary memory		主存储器
Arithmetic and Logic Unit		算术逻辑部件

(II) Text:

Computer is no longer something new and magical to many people nowadays, because many families now have at least one computer in their homes. It is without doubt that there are thousands and millions of computer users in the country, but is it ever possible for all of them to explain how a computer works[①]? No. All right, can they even classify the components of a computer appropriately? Not quite. They may know how to describe the physical appearance of a computer and they will probably include two or three other terms as well, such as monitor, keyboard or a mouse. Nonetheless, classification of a computer should not be done this way. In fact, a computer can be broken down into three distinct categories, namely output, input and CPU.

Fig. 2.1 shows the organization of a computer system. The term 'output' consists of all