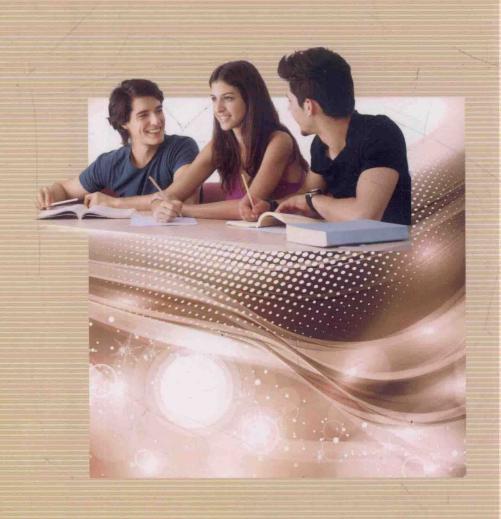
ICT英语视听说教程

吴 建 张韵菲 主编

A Coursebook on ICT: Listening and Speaking



ICT英语视听说教程

A Coursebook on ICT: Listening and Speaking

主 编 吴 建 张韵菲 副主编 康 艳 殷安生 孔 莉 参 编 陶李春 王晓燕 任 芳 殷 健 审 校 王竞雄

图书在版编目(CIP)数据

ICT 英语视听说教程 / 吴建, 张韵菲主编. 一 南京: 南京大学出版社, 2016.6

高校英语选修课系列教材. ICT(信息与通信技术) 英语系列

ISBN 978 - 7 - 305 - 16953 - 3

I. ①I··· Ⅱ. ①吴··· ②张··· Ⅲ. ①信息技术 - 英语 - 听说教学 - 高等学校 - 教材②通信工程 - 英语 - 听说教学 - 高等学校 - 教材 Ⅳ. ①H319.9

中国版本图书馆 CIP 数据核字(2016)第 109275 号

出版发行 南京大学出版社

社 址 南京市汉口路 22 号

邮 编 210093

出版人 金鑫荣

丛 书 名 高校英语选修课系列教材·ICT(信息与通信技术)英语系列

书 名 ICT 英语视听说教程

主 编 吴 建 张韵菲

责任编辑 张淑文

编辑热线 025-83592655

照 排 南京南琳图文制作有限公司

印 刷 南京人民印刷厂

开 本 787×1092 1/16 印张 12 字数 277 千

版 次 2016年6月第1版 2016年6月第1次印刷

ISBN 978 - 7 - 305 - 16953 - 3

定 价 38.00元

网址: http://www.njupco.com 官方微博: http://weibo.com/njupco

官方微信号: njupress

销售咨询热线: (025) 83594756

^{*}版权所有,侵权必究

^{*} 凡购买南大版图书,如有印装质量问题,请与所购图书销售部门联系调换

前言

ICT(Information Communication Technology)指信息通信技术,是信息技术与通信技术相融合而成的新的概念和技术领域。ICT产业是当今经济社会发展最快的科技领域之一,也是当今经济社会发展的主要推动力量。

本教材面向我国快速发展的 ICT 产业国际化对语言服务人才的需求,读者对象主要为 ICT 业内需要使用英语、尤其是以口头与听力形式对外交流的人士,以及面向 ICT 产业从事英语教与学的老师与同学们。

本教材内容编写围绕 ICT 十大领域,各成一章。第一章:互联网;第二章:下一代网络;第三章:大数据;第四章:数据中心;第五章:云计算;第六章:人工智能;第七章:物联网;第八章:移动网络;第九章:虚拟现实;第十章:网络安全。每章选取三个长度、难度适中的视频,尽量避免过于专业化,既求知识性,也求趣味性。视频后配有若干听力与口语话题练习。视频和练习参考答案放在南京大学出版社网站(www.njupco.com)"高校教材中心"的"课件下载"中,供读者下载参照。

由于编者水平有限,教材中难免会出现不妥之处,请读者见谅。希望这本教材能为培养 ICT 产业外语服务人才贡献一份力量。

编 者 2016年5月

目 录

Cha		Internet	
	FUN FA	CTS	1
	Warm-u	Activities	
	Part I	How Does the Internet Work?	2
	Part II	History of the Internet	
	Part Ⅲ	Darkest, Deepest Parts of the Internet	11
Cha	pter I	Next Generation Network	17
	FUN FA	CTS	17
	Warm-u	p Activities	17
	Part I	Everything You Should Know About 5G	18
	Part II	What Is Next Generation Mobile Communications: 5G	21
	Part Ⅲ	World's First 5G Mobile "Device"	25
Cha	npter I	Big Data	29
	FUN FA	Big Data ACTS	29
		p Activities	
	Part I	Big Data Explained ·····	30
	Part II	Big Data for Smarter Customer Experiences	34
	Part Ⅲ	The Big Data Life Cycle—Oracle	36
Cha	apter IV	Data Center	41
	FUN FA	ACTS	41
	Warm-u	p Activities	41
	Part I	Data Center Explained ····	42
	Part II	Evolution of the Data Center	45
	Part II	Inside a Google Data Center ·····	49
Cha	apter V	Cloud Computing	55
	FUN FA	ACTS	55

ICT 英语视听说教程

Discount	action .
450	
100	200
100	- 48
500	:60
333	1502
800	- Bar

	Warm-uj	Activities	55
	Part I	What Is Cloud Computing?	56
	Part II	Under Cloud Cover—A Banking Industry Perspective	59
	Part Ⅲ	What Are the Business Benefits of Cloud Computing?	63
Cha	apter VI	Internet of Things	69
	FUN FA	CTS	69
	Warm-uj	Activities	69
	Part I	What Is Internet of Things?	70
	Part Ⅱ	Smart Cities USA—San Jose, CA	
	Part Ⅲ	Smart Plant and the Internet of Things	77
Cha	apter VI	Artificial Intelligence	82
	FUN FA	CTS	82
	Warm-uj	Activities	83
	Part I	Future of Driverless Cars	83
	Part II	How Smart Is Artificial Intelligence?	87
	Part Ⅲ	What Is HCI?	93
Cha	apter 🎹	Mobile Network ····	98
	FUN FA	CTS	98
	Warm-uj	p Activities	98
	Part I	Have You Got a Mobile Website?	
	Part II	What Is Mobile Banking	
	Part Ⅲ	Should You Buy an Apple Watch?	106
Ch	apter X	Virtual Reality	111
	FUN FA	CTS	111
		p Activities ····	
	Part I	Virtual Reality Explained	
	Part I	The Future of Shopping Experience	116
	Part Ⅲ	The Future of Virtual Reality	121
Ch	apter X	Network Security	125
	FUN FA	CTS	125
	Warm-u	p Activities	125
	Part I	How Does Internet Security Work?	126
		Viruses, Worms and Botnet Explained	
	Part II		



Supplementary Reading	140
1. Who Owns the Internet?	140
2. How 5G Will Push a Supercharged Network to Your Phone, Home, Car	
1	144
3. Reinventing Society in the Wake of Big Data 1	148
4. Google, Facebook and Apple Lead on Green Data Centers	156
5. How Music Clouds Work	158
6. Internet of Things: Hyped but Here to Stay	163
7. How Google Deep Dream Works	166
8. How Virtual Crime Scenes Work	170
9. How Mobile Web Pages Work · · · · · 1	175
10. Could a Single Hacker Crash a Country's Network? 1	180



Chapter I Internet

FUN FACTS



Fun Fact A

People who use social networking sites such as Facebook and Twitter will use 10% of their entire life time on these sites.

Fun Fact B

19% of married couples meet online, making it the most successful method for meeting the "one." Following an online introduction the most successful methods for meeting a future wife or husband continues to be through work or friends, with each of these methods getting 17% of married couples together.



Warm-up Activities

- 1. How much do you know about the Internet?
- 2. What is the best thing about the Internet?
- 3. About how many hours a day/week do you use the Internet?
- 4. Do you think our lives have been improved by the Internet?
- 5. How can the Internet help you learn English?



How Does the Internet Work? 《《 >>> Part I

	7
	1870AF 60
	March 1966, second control of
. Why do we call the Internet the netwo	ork of networks?
A mg/Lmm1	
	B per my
. What is Internet Exchange and how do	A DESCRIPTION OF THE PROPERTY OF THE PARTY.
	oes it work?
	A DESCRIPTION OF THE PROPERTY OF THE PARTY.
	oes it work?

When you use the Internet, what happens? Whether you go online to chat with a friend, or send mail, or buy a book, or check the weather, watch a movie or study the Peloponnesian war, it feels like there is one wire connecting you directly to the thing you want. But a billion other people are connecting to a billion other things at the



same time. How does that happen? It's really about making agreements.
① It only works if we agree to play by the same rules. Otherwise, it's not
much fun. If you can get two or more computers to play together, you have a
network. If your friend can do it too, there is another network. But if you both agree
that your networks will play the same way, now you can hook the two together. You
have an inter-network. The rules we play by are called the
2 And as long as we all agree, we can keep adding more devices and more networks
until the whole world is connected. That's what the Internet is
a network of networks that share each other ③ Anything
you send via Internet is really just the message from one device to another. But it
doesn't travel in one big blunk. It gets, ④ each one wrapped
with info about what it is, where it came from and where it's going. This way, your
one message can actually take several different paths to its destination. Then by
following the protocol, the receiving device knows how to put it all back together.
⑤ With so many possible connections, there is no single
point of failure, ⑥ your data just takes a different path.
Even if a big chunk of the Internet gets wiped out, your message can still find its way.
But let's say you use one Internet provider and your friend is on a different one, how
does your data really get from one network to the other? Some companies
⑦ But more and more traffic is flowing through
® An Internet Exchange is a place where many different organizations come together
to interconnect their technology. There may be Nearly
anybody who lies on network traffic can benefit from the exchange. By connecting in
a common place, they save costs and the traffic between them goes faster and much
more efficiently. Traditionally, providers have sold each other passage on their
networks. But for some providers who regularly exchange traffic, all that buying and
selling get to be more trouble than its worth. Many of them saw that if they just agree
to meet each other half way, then everybody's cost goes down, and the traffic moves
more smoothly. Providers are able to make a single connection to the platform to
exchange traffic with many participants. This way of doing things is called peering
and it's making the Internet faster and more affordable for everybody. The exchange
participants make deals with each other according to mutual benefit, so the peering
system tends to regulate itself. It may seem like companies are giving away their
services, but in fact, each is providing their part of the whole solution their customers
need to most efficiently and reliably exchange traffic. The Internet is open,
decentralized and totally neutral 1 No single organization
controls it. And that's why it works as well as it does. By agreeing to cooperate, we
all make the Internet happen. And that's how the Internet happens.



2	references as the transfer multiple with a second
	grafingen ig til tydag på ig hallet Gregorie og i til til
3	
4	i na i liggini kang pakaman
Take reserved at a real of the	
5	
6	Triangle to the property of the second property
CORD HARL AND LONG TO	
	فيماليهم فالمناشب كراب المنست كراب عديده
	THE THE PERSON WAS A PROPERTY OF
8	
	y and the section of appropriate lands there are
9	The last delicate and the second
a right of the state of	ris G. Tatolino T. S. Servicio de la compansión de la compansión de la compansión de la compansión de la compa
	lace publications or against policy or against the major
raping light to their se	
value to a construction of the construction of	
Task ■ Match the following t	erms on the left with their definitions on the right.
1. Internet protocol□	a. any organization that arranges for an
互联网协议	individual or an organization to have access
2. packet□	b. a process by which two Internet networks
数据包	connect and exchange traffic
3. access provider □	c. an organization that provides services for
通路提供商	accessing, using, or participating in the Internet
	internet age and the stand othership its



4. Internet exchange point	nt□ d. rules for exchanging messages between
互联网交互机中心	computers across a single network or a series
	of interconnected networks
5. social network site□	e. unit of data that is routed between an origin
社交网站	and a destination on the Internet
6. telecom operator□	f. web-based services that allow individuals to
电信运营商	socialize with each other
7. peering□ 对等体系	g. a numerical label assigned to each device participating in a computer network that uses the Internet Protocol for communication
8. Internet Provider	h. a physical network access point through
互联网供应商	which major network providers connect their networks and exchange traffic
9. shared services	i. an organization that provides communications
共享服务	services such as telephony and data communications access
10. Internet address	j. the provision of a service by one part of an
因特网地址	organization or group where that service had
	previously been found in more than one part
	of the organization or group
Task N Group Work	
1. Tell your partners brie	efly how Internet works.
2. Look up the following	terms online and try to explain at least three of them.
(1) Hyperlink	(2) Homepage (3) Hypertext (4) Friendly URL

▶ Part I History of the Internet 《

(7) Domain

Task I Watch the video and answer the following questions.

(6) DNS

(10) Digital Footprint

1. What were the first computers like in the 1950s?

(5) FTP

(9) Cyberbullying

(8) Instagram

(12) 404 Error

Reference to the Research	91 11.71	
2. What were the problems cor	nfronting the early compo	uter users?
market and the field of the	of Bottle unit	ne Zielle geber
		77 - 77 - 181 Y
3. Which is better, a centralized	d network architecture of	r a decentralized one? Why?
m.D Asper 19 fig.: s		
Special section and shall de-		J. Com. Temple
Andrew Roberts Company	qine ; are	
4. How did CYCLADES differ	from other early networ	rks?
The processing success		
		The second second second
5. What is the current protocol	l used by the Internet?	
5. What is the current protocol		
5. What is the current protocol		
P#61 70 pt		Carl man V id date
P40 70 11.		Carl man V id date

we take an interest in, even our banking is going virtual. But what we take for granted today was only a vague idea 50 years ago. In order to understand how we got this far, let's go back to 1957 when everything began. Before 1957, computers only worked on one task at a time. This is called batch processing. Of course, this was quite ineffective. With computers getting bigger and bigger, they had to be stored in special cooled rooms. . ① Specialists had to be called in to connect 2 led to a lot of bugs, wasting time and fraying the them. developers' nerves. The year 1957 marked a big change. A remote connection had to be installed, so the developers could work directly on the computers. At the same time, the idea of Time Sharing came out. This is the first concept in computer technology to share the processing power of one computer with multiple users. On



October 4 in 1937 during the cold war, So The real of a
missile gap emerged. In order to secure American leading technology, the US founded
the Defense Advanced Research Project Agency in February 1958. At that time,
knowledge was only transferred by people @ and avoid the
doubling up of already existing research. This network would become the ARPANET.
Furthermore, three other concepts were to be developed, which are fundamental for
the history of the Internet. The concept of a military network by the RAND
Corporation in America, the Commercial network of the National Physical Laboratory
in England, and the scientific network—CYCLADES in France.
(5) Let's begin with the ARPANET, the most familiar of these networks. Its
development began in 1966. Universities were generally quite cautious about sharing
their computers. Therefore, small computers were put in front of the mainframe.
This computer, the Interface Message Processor, took over control of the network
activities, while the mainframe was only in charge of the initialization of programs
and data files. At the same time, the IMP also served as interface for the mainframe.
Since only the IMP was interconnected in the network, this was also called IMP
subnet. For the first connections between the computers, the network working group
developed the Network Control Protocol. Later on, the NCP was replaced by the
more efficient Transmission Control Protocol ⑥ Let's take a
short detour to England. Since the NPL network was designed on a commercial basis,
a lot of users and file transfer were expected. In order to avoid congestion of the
lines, the sent files were divided into smaller packets, which were put together again
at the receiver. Packet-switching was born. In 1962, American Fairey Aircraft
discovered middle and long range missiles in Cuba, which were able to reach the
United States. This stoked fear of atomic conflict ⑦ To
avoid breakdown during the attack, a decentralized network architecture had to be
developed, which in case of loss of a node would still be operative. Communication
still used to work through radio raves. That would have caused problems in case of an
atomic attack. The ionosphere would be affected and the long-wave radio waves
wouldn't work anymore. Therefore, they had to use direct waves, which, however,
don't have a long range. A better solution was the model of a distributed network.
. ® Another milestone followed was the development of the
French network CYCLADES. Since CYCLADES had a far smaller budget than
ARPANET, and thus also fewer nodes, the focus was laid on the communication with
other networks. In this way, the term inter-net was born. Moreover, CYCLADES
concept went further than ARPA's and the NPL's
CYCLADES protocol went through all machines using a physical layer that was
implemented into the hardware, providing a direct connection with the receiver and



end-to-end structure. Inspired by the CYCLADES network and driven by the incompatibility between the networks, their connection gained importance everywhere. The phone companies developed the x. 25 protocol, which enabled		
communication through their service in exchange for a monthly basic charge of cour		
DARPA's Transmission Control Protocol was to connect the computers through gateways. And the International Organization for Standardization designed the OS reference model. The intervention of OSI was the attempt to standardize the network		
	he OSI reference model and gave way to the TCP/IP	
protocol, man and the parties	. ⁽¹⁾ By February the 28th, 1990, the ARPANET	
hardware was removed, but the	Internet was up and running.	
Omercion se se a 1 picto	, skoto talii Prinis (licux isli mende) teragindo sindi	
And the late of th	RO THE SHOP! THE ZERES WITHOUT THE PROPERTY SHOP!	
	A property of the war was to hard a property of the contract o	
	early to be life. At the mine store for laiff all of leater	
	inter Ar in approximate of the 9641 and the incomes	
	The second is the second in th	
	A Control Person Convert miner and the cited	
and horizonnosi es laurida.	death defour test maintal. Since the MPL melves it will	
4	The of the transport of the experience of the contract of the	
	and a particular and letting a gravital tree additional	
	at the receiver. Medicines was form. In to	
	discovered and die and teng trenge mesta. In CVD-	
6	Chaires states the sense of the state of the	
	livelation that desire and about award-bard blows.	
	developeds which are task of loss of a take would sta- ted used to work through cated are established to	
(7)	To the first till the production of the state of the stat	
	on of the land to the foreign and the main black	
	don't here a long range. A better offered a set with	
	a well a commercial control of the c	
	Contract of months of the first phonon changes	
9 restroinger no see no but	er's suspinal to the property of the first of the sun and the	
	other half which sale, was maken a service and	
0	contrept went truther the o ARPAS and the NIS of	
A STATE OF THE STA	er entrant In thursday into losolog difficulties	
THE TENED AND THE PARTY OF TAMES	and comments and the nardwares providing a corest of	



Task ■ Match the following terms on the left with their definitions on the right.

1. programming□ 编程	 a. a high-performance computer used for large-scale computing purposes that require greater availability and security than a smaller-scale machine can offer
2. time sharing□ 分时	 b. a connection point, a redistribution point, or a communication endpoint (e. g. data terminal equipment)
3. processing power□ 处理能力	c. a method of data distribution where information is broken into small segments of data known as packets and then reassembled when received at the destination
4. mainframe□ 主机	 d. a process that leads from an original formulation of a computing problem to executable computer programs
5. ionosphere□ 电离层	e. the ability of a computer to manipulate data, often known as CPU power, CPU cycles, and various other names
6. subnet□ 子网	f. a type of computer network that is spread over different networks
7. packet-switching□ 分组交换	g. a technique which enables many people, located at various terminals, to use a particular computer system at the same time
8. network architecture□ 网络架构	h. an identifiably separate part of an organization's network, typically representing all the machines on the same local area network (LAN)
9. distributed network□ 分布式网络	 i. the layout of the network, consisting of the hardware, software, connectivity, communication protocols and mode of transmission, such as wired or wireless
10. node□ 节点	j. the layer of the Earth's atmosphere that is ionized by solar and cosmic radiation. It lies 75~1000 km

1. Where do you see the Internet in twenty years from now? Exchange views with your



partners.

2. Look at the following pictures and try to explain their idea to each other.

1 2





3 mart strong and could be thought a series of the series



