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# COMPREHENSIVE ACADEMIC ENGLISH

## 综合学术英语 教程

清华大学出版社

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北京

## 内 容 简 介

本教材旨在培养学生的英语学术能力，共分为八个单元，涉及城市规划、教育、科技、经济、学术欺诈、医疗卫生、环境和学习行为八个主题，依托每个主题展开一个具体的学术英语能力训练；同时，该教材力求增强学生的自主学习能力、批判性思维能力，使学生能够通过批判性阅读对学术话题形成自己独立的观点。

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# PREFACE

《综合学术英语教程》一书依据《大学英语教学指南》中提出的提高和发展目标，面向具有较高英语水平学习者而编写。该教材旨在培养学生的英语学术能力，使其掌握一定的说、读、写等学术英语交流能力；注重培养学生的学术写作能力，使其能够使用学术资源，用论文、报告等形式阐明观点或立场，语言清晰、结构明确；同时增强学生的自主学习能力和批判性思维能力，使其能够通过批判性阅读对学术话题形成自己独立的观点。

全书共八个单元，涉及城市规划、教育、科技、经济、学术欺诈、医疗卫生、环境和学习行为八个主题。前六个单元对学术英语交流的文体和写作方式进行介绍，使学生通过配套练习循序渐进地掌握不同文体的表达技巧；最后两个单元是关于研究报告及口头陈述的学术英语的实践应用。本教材依托每个主题展开具体的学术英语能力训练，每种能力细分为阅读、写作和思辨能力培养等分项技能，每种分项技能又细化为若干子技能，以任务的形式体现出来。

我们在编写过程中力图使教材突出以下特点：

①以学术英语能力发展为主线，以内容为依托，通过阅读使学生关注学术英语交流应用文体，以阅读带动学术英语写作能力的发展。

②教材编写注重理论联系实践，按照建构主义等教学理念，设计任务型、项目型等符合专业特色的练习，让学生在练习中掌握学术英语文章的特点、规范与技巧。

③充分考虑学生的具体需求，注重教材的趣味性、易读性、实用性，使教学和学生学习的实际情况结合。教材选篇以科普知识内容居多，不过分强调专业性，不要求学生具有很强的专业背景知识才能理解文章。在编写语言方面，编者充分考虑到非英语专业学生的实际情况，力求简明扼要，使学生更方便、准确地了解、掌握教材内容。

④参照《通用学术英语水平考试大纲（征求意见稿）》设置部分课后练习，本教材可作为《通用学术英语水平考试》的备考教材。

根据各学校的课程设置情况，编者提供以下两种使用方法：

a. 供一个学期 64 学时的教学使用。教师可以主讲课文 A 和 B, 尤其是学术写作 (Academic Writing) 部分的内容, 其他部分的练习可布置为课后作业, 供学生自主学习。

b. 供一个学期 32 学时的教学使用。教师可以主讲课文 A, 课文 B 部分可作为学生的自主学习内容。

《综合学术英语教程》采取集体研讨、分工负责的原则编写。编委会多次就教材体例、选材等问题展开集体研讨。主编及参编人员均为长期从事大学英语教学并讲授学术英语拓展课程的一线教师。

本教材在编写过程中, 引用了一些国内外书刊的内容, 有些找不到出处和作者, 在此对原作者一并表示感谢。编者衷心希望这本教材能为学习者增强学术英语交流能力助一臂之力。由于编者的水平有限, 教材中难免有疏漏与不足之处, 恳切希望广大读者予以指正。

编者

2018 年 6 月



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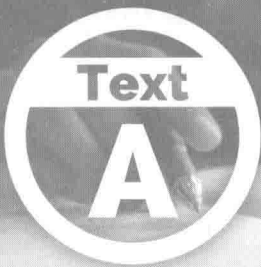
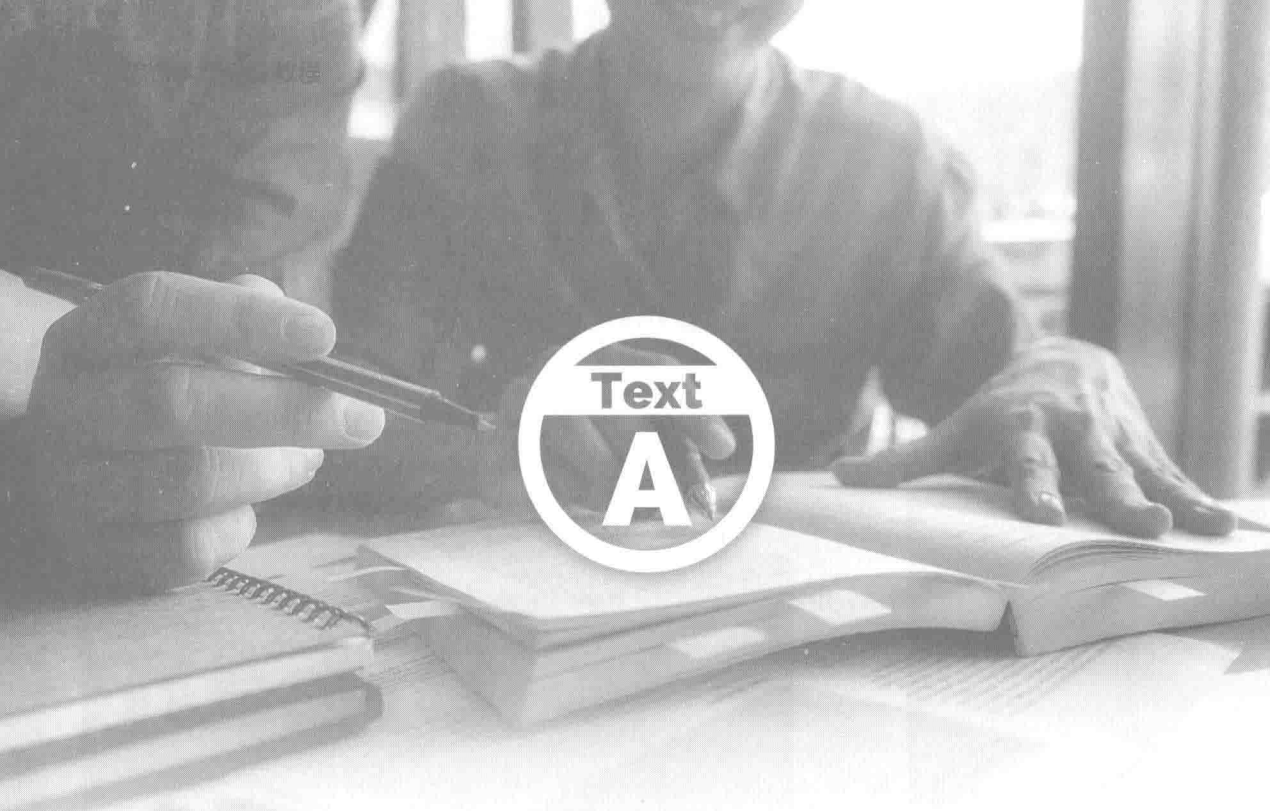
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# Unit 1

## Urban Planning





## Pre-reading tasks

**A** China has embraced what it terms the “Sponge City” concept because, combined with the facts of rapidly growing urban populations, poor water management and climate change, half of China’s 657 cities are reported to be water scarce. Of these cities 230 were affected by flooding in 2013 alone.

Have you ever heard of the concept of “Sponge City”? Do you think the sponge city concept can help cities cope with heavy precipitation? How can that concept be applied in cities in China?

**B** “Zipper Road” refers to roads with ditches dug for repair-work and installations on many city main roads, which may be re-dug for another project in the future; “Overhead Spider Webs” refer to unsightly power-lines and telecommunications cables hung in the air over streets.

What do you think can be done to prevent new “Zipper Road” and “Overhead Spider Webs” from showing up in Chinese cities?

## Living Lab:

# Urban Planning Goes Digital in Spanish “Smart City”

By Marco Evers<sup>1</sup>

*Cities around the world aim to become “smart cities,” but in Santander<sup>2</sup>, Spain, the goal has already become a reality. Thousands of sensors help alert residents to traffic jams, regulate the watering in city parks and dim the street lamps.*

1 Cities all around the world have set the same goal for themselves. Amsterdam<sup>3</sup>, Barcelona<sup>4</sup>, Birmingham<sup>5</sup>, Dubai<sup>6</sup>, Helsinki<sup>7</sup>, San Diego<sup>8</sup>, Stockholm<sup>9</sup>, Nanjing, Vienna<sup>10</sup>, Yokohama<sup>11</sup> they all share an **aspiration** to become “smart cities.”

2 That sounds like an appealing aim, yet when urban planners try to explain more **precisely** how they plan to lead their cities into the digital future, their answers are less **convincing**, with each proposing a different plan. Despite the many **symposiums** that have been held on this subject, there is no **consensus** on how to pursue this ambition.

3 Essentially the only thing all parties can agree on is that “smart” cities will employ sensors, computers and smartphones, and they will implement new forms of city government, making administrative processes more transparent than ever before. The idea is that digital technology will help make urban living cleaner, more sustainable and more pleasant. And, of course, it should increase prosperity as well.

4 Amid this uncertainty, an old port city on Spain’s Atlantic coast has **surged** to the **forefront** of those aspiring to be smart cities. Despite its **cash-strapped** finances, the city of Santander, birthplace of the major bank of the same name, is already quite smart.

### Smart City Experiment

5 “This is the future,” Mayor Iñigo de la Serna, 42, of the conservative Partido Popular<sup>12</sup>, declares proudly. “This is the only way to change things,” he said, adding that every major city would eventually have to do the same. “It’s not an option. It’s **obligatory**.”

6 The ocean waters are rough here in the springtime. Grand hotels and a **high-end casino** line the beach, where surfers in neoprene wetsuits<sup>13</sup> launch themselves into waves meters high. In Spain, Santander has had a reputation for **glamour** ever since King Alfonso XIII<sup>14</sup> chose the city as his summer residence almost 100 years ago.

7 Lately, though, curious visitors have been **dropping in** for another reason. Some come on behalf of major corporations such as Google, Microsoft or IBM<sup>15</sup>. Recently, a delegation came

from Japan and another flew in from Wuxi, China, a city with a population of several million. All of these visitors see Santander as a living experimental laboratory, a town that—with its population of about 180,000—is neither too large nor too small to function as a smart city experiment.

8 Luis Muñoz, 48, is an IT professor at the University of Cantabria<sup>16</sup>. He received nearly €9<sup>17</sup> million (\$11.7 million) in research money, most of it from the EU<sup>18</sup>, to develop a prototype smart city. Muñoz **permanently** installed 10,000 sensors around downtown Santander, throughout an area of 6 square kilometers (2.3 square miles). The sensors are hidden inside small gray boxes attached to street lamps, poles and building walls. Some are even buried beneath the **asphalt** of parking lots.

### Sensors at Work

9 **Day in and day out**, these sensors measure more or less everything that can be measured: light, pressure, temperature, **humidity**, even the movements of cars and people.

10 Every couple of minutes, they transmit their data to Muñoz's laboratory at the university, the central location that collects data streams from throughout the city. Every single bus transmits its position, **mileage** and speed, as well as data from its environment, such as **ozone** or **nitric oxide** pollution levels. Taxis and police cars do the same. Even the people of Santander can choose to become human sensors themselves. All it takes is to download a special app<sup>19</sup> for GPS<sup>20</sup>-enabled cell phones.

11 A central computer **compiles** the data into one big picture that is constantly being updated. Santander is a digital city, and everything here gets recorded. The system knows exactly where the traffic jams are and where the air is bad. Noise and ozone maps show what parts of the city are exceeding EU limits. Things can get particularly interesting when a major street is blocked because of an accident. Muñoz can observe in real time how that event affects traffic in the rest of the city.

12 In the past, Mayor de la Serna sent out **nightly patrols** to check for street lamps that were **out of order**. Now, Muñoz's computer informs the city exactly where new light bulbs are needed. The lamps can even adjust their brightness as needed, dimming when there is no one on the street, and emitting less light during a full moon than on a rainy night.

13 In the Parque de las Llamas<sup>21</sup>, too, sensors will soon help **optimize** the amount of watering done in the park, so that no water is wasted. And garbage collectors will eventually be able to avoid making unneeded trips, because sensors will inform them beforehand which garbage containers need emptying.

### Accessing the Information

14 All of these things save some money, but they still don't make a city particularly smart. A

truly smart city is one in which as many residents as possible can access this and other types of information effortlessly. Mayor de la Serna is particularly proud of his iPhone's new "Pulse of the City" app, which does just that, connecting Santanderinos to their city's data streams.

**15** For example, someone waiting at a bus stop and wanting to know when the next bus will arrive needs only to start up the smartphone app and point the phone toward the bus stop. The phone immediately displays all bus lines that serve that stop, as well as their arrival times. Pointing the phone at the city's concert hall brings up the program of events over the next several days and weeks. A tourist holding a smartphone toward a downtown fountain learns when the fountain was built and by whom, while opening the app near a supermarket provides information on current special offers.

**16** In the past, residents frustrated with **potholes** in Santander's streets called the city government or wrote a letter. Now it's enough just to open the "Pulse of the City" app and take a picture of the hole. One more click sends this digital damage report, complete with GPS data, straight to city hall.

**17** From there, a computer forwards the information both to those who are responsible for the technical side of fixing the problem and to those who bear political responsibility for it—a two-pronged approach that apparently increases the system's effectiveness. All of the data is made public, but the person who originally sent the complaint remains **anonymous**. City residents and local media can also use the app to follow how long it takes for the damage to be repaired. The city, of course, tries to act as quickly as possible.

**18** Santanderinos have used the app to report more than 500 issues since "Pulse of the City" was launched about five months ago. "People's faith in this technology is growing," de la Serna says. In comparison, sending an email to a German city hall can seem like tossing a message in a bottle out to sea.

## Making Data Public

**19** Next, Mayor de la Serna wants to air the city's secrets. Many types of information that were previously **confidential** or difficult to access will now be made public, including statistical data on **demographic** changes and real estate prices. Then the mayor wants to create a digital equivalent of a village square. The app "Ideas for All"—something like Facebook but specifically for city residents—will connect the city with its inhabitants. "We want to create a new, cooperative relationship between the people and the city government," de la Serna explains.

**20** The mayor hopes this flood of data will inspire programmers to create more apps to make Santander even smarter. So far, there has been no resistance to the project. None of Muñoz's sensors have **fallen prey to vandals**. Taxi drivers initially feared the city wanted to use these

sensors to carry out constant **surveillance** of the city, but that concern, de la Serna says, has long since given way to pride at being part of such a **futuristic** project, especially during a difficult economic period.

21 ▶ That pioneering spirit is apparently already paying off. The Spanish multinational company Ferrovial<sup>22</sup>—owner of, among other assets, London's Heathrow Airport<sup>23</sup>—has decided to invest in Santander and will build a smart city research centre there.

(1,409 words)

### New Words and Expressions

<b>aspiration</b>	<i>n.</i>	抱负	<b>mileage</b>	<i>n.</i>	英里数; 里程
<b>precisely</b>	<i>adv.</i>	精确地; 准确地	<b>ozone</b>	<i>n.</i>	臭氧
<b>convincing</b>	<i>adj.</i>	令人信服的	<b>nitric oxide</b>		一氧化氮
<b>symposium</b>	<i>n.</i>	讨论会	<b>compile</b>	<i>v.</i>	编制
<b>consensus</b>	<i>n.</i>	共识	<b>nightly patrol</b>		夜间巡逻
<b>surge</b>	<i>v.</i>	汹涌而来	<b>out of order</b>		出故障的
<b>forefront</b>	<i>n.</i>	最前线	<b>optimize</b>	<i>v.</i>	使优化
<b>cash-strapped</b>	<i>adj.</i>	缺钱的	<b>pothole</b>	<i>n.</i>	坑洞
<b>obligatory</b>	<i>adj.</i>	必须的	<b>anonymous</b>	<i>adj.</i>	匿名的
<b>high-end</b>	<i>adj.</i>	高级的	<b>confidential</b>	<i>adj.</i>	机密的
<b>casino</b>	<i>n.</i>	赌场	<b>demographic</b>	<i>adj.</i>	人口统计学的
<b>glamour</b>	<i>n.</i>	魅力	<b>fall prey to</b>		深受……之害
<b>drop in</b>		偶然拜访	<b>vandal</b>	<i>n.</i>	破坏公共财产者
<b>permanently</b>	<i>adv.</i>	永久地	<b>surveillance</b>	<i>n.</i>	监视
<b>asphalt</b>	<i>n.</i>	沥青; 柏油	<b>futuristic</b>	<i>adj.</i>	未来主义的
<b>day in and day out</b>		日复一日	<b>city hall</b>		市政厅
<b>humidity</b>	<i>n.</i>	湿度	<b>real estate</b>		不动产

### Academic Terms

<b>sensor</b>	传感器	<b>data stream</b>	数据流, 以规定顺序被
<b>urban planner</b>	城市规划师		读取一次的数据序列
<b>prototype</b>	原型; 雏形	<b>damage report</b>	损坏报告
		<b>two-pronged approach</b>	双管齐下

### Notes

1. Marco Evers 马克·埃沃斯, 荷兰新闻网站 Spiegel Online 记者。
2. Santander 桑坦德, 桑坦德省的省会。
3. Amsterdam 阿姆斯特丹, 荷兰首都。

4. Barcelona 巴塞罗那, 西班牙第二大城市。
5. Birmingham 伯明翰, 英国城市。
6. Dubai 迪拜, 阿联酋最大的城市。
7. Helsinki 赫尔辛基, 芬兰首都。
8. San Diego 圣地亚哥, 美国城市。
9. Stockholm 斯德哥尔摩, 瑞典首都。
10. Vienna 维也纳, 奥地利首都。
11. Yokohama 横滨, 日本城市。
12. conservative Partido Popular 西班牙的保守派人民党。
13. neoprene wetsuit 氯丁橡胶潜水服。
14. King Alfonso XIII 阿方索十三世(1886—1941), 西班牙国王, 1902年亲政, 1931年王朝被推翻, 流亡国外至死。
15. IBM 全称 International Business Machines Corporation, 国际商业机器公司。
16. University of Cantabria (西班牙)坎塔布里亚大学。
17. € 欧元。
18. EU 全称 European Union, 欧洲联盟。
19. app 应用程序。
20. GPS 全称 Global Positioning System, 全球定位系统。
21. the Parque de las Llamas 桑坦德的拉马斯公园。
22. Ferrovial 法罗里奥集团, 西班牙最大的房地产开发商之一。
23. Heathrow Airport 希思罗机场, 位于伦敦, 是世界上最繁忙的机场之一。

## After-reading check

### Task 1 Reading comprehension

Choose the correct answer to each of the following questions.

- 1) Which of the following is true about the “Smart City”?
  - A. It has become the common aspiration for all cities in the world.
  - B. It has been clearly defined and regulated by symposiums.
  - C. It has been put into practice somewhere in the world.
  - D. It is the sole responsibility of the urban planners.
- 2) To be qualified as “smart”, cities all around the world need to \_\_\_\_\_.
  - A. encourage citizens to buy more computers and smartphones
  - B. create a more comfortable and convenient lifestyle for their citizens

- C. employ more government agents who are tech-savvy  
D. be more sensitive to the citizens' demands
- 3) What does Mayor Iñigo de la Serna say about the experiment in his city?  
A. It is the only chance for the city to solve the financial problem.  
B. It is one of the urban planning alternatives for future cities.  
C. It is the only way to restore the past glory of the bank built here long ago.  
D. It is the only correct development mode for all cities to learn from.
- 4) What makes Santander a good place to conduct the experiment of building a "Smart City"?  
A. Its moderate population.  
B. Its beautiful scenery.  
C. Its fame as a royal summer residence.  
D. Its function as a port.
- 5) Many sensors have been installed around the city to \_\_\_\_\_.  
A. measure all things going on within their detecting range in the day  
B. transform people into human sensors  
C. transmit data back to the laboratory at the university  
D. control data stream from throughout the city
- 6) How can the system in the central computer manage the city traffic?  
A. It can pinpoint the locations where traffic jams occur.  
B. It can prevent the traffic accidents beforehand.  
C. It can direct the rest of the city to cope with the effect of a traffic incident.  
D. It can dispatch patrols to help maintain the traffic order.
- 7) According to Mayor de la Serna, to be really smart, a city needs to \_\_\_\_\_.  
A. save a lot of budget money for the city  
B. allow citizens access to the city's data stream easily  
C. offer new apps for its iPhone users effortlessly  
D. offer citizens all kinds of information via the iPhone
- 8) Which of the following service is available with the "Pulse of the City" app?  
A. Booking a ticket in the next bus to arrive at the stop.  
B. Booking a ticket for a performance at the concert hall.  
C. Learning information about a fountain by pointing the phone at it.  
D. Enjoying discounts at local supermarkets by paying with the phone.
- 9) How can the efficiency of the city hall be improved in the example of potholes?  
A. The city hall's response to the damage report is made public.  
B. The city hall completely relies on the technical side to fix the damage.  
C. The city hall can learn more information from the person who filed the complaint.  
D. The city hall is no longer worried about the political responsibility.