



北京理工大学“明精计划”学术丛书

# 理工专业 通用学术英语

## 教师用书

主编 叶云屏 主审 李霄翔

**E**

ENGLISH FOR GENERAL

ACADEMIC PURPOSES TEACHER'S HANDBOOK



北京理工大学出版社

BEIJING INSTITUTE OF TECHNOLOGY PRESS

# 理工专业通用学术英语

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## 内 容 简 介

《理工专业通用学术英语·教师用书》介绍了编写和使用全套教材的总体原则,即始终瞄准通用学术英语课程教学目标;突出各学期各阶段教学重点;满足不同学生的语言发展需要;注重培养自主学习能力和终身学习理念;使教师角色与信息社会的教育环境相适应。根据这些原则,本书对某些教学环节提出了具体建议,提供了全套教材中非开放式问题和练习的参考答案,也提供了听力材料的网址及部分文本。

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# 《理工专业通用学术英语·教师用书》

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# 前 言

现阶段大学英语教师面临着新一轮教学改革的巨大压力和挑战。《理工专业通用学术英语》是应对这一挑战、转变高校英语教师角色和英语教学理念的新尝试。以下是根据我们对学术英语教学目标与任务的理解所采用的教材编写原则，也是教师们在使用本套教材时可参考的总体原则。

## 1. 始终瞄准通用学术英语课程教学目标

通用学术英语课程教学的目标是培养学生对书面学术语篇和口头学术语篇的理解与产出能力所需要的核心技能。根据专门用途英语（包括学术用途英语和职业用途英语）的选材原则，本套教材中的课文和练习是根据理工类学生的英语学习需要和英语教学目标所挑选的真实材料。材料内容虽然与理工专业人才培养理念和专业内容相关，但课堂教学活动却围绕对这种类型材料的听、说、读、写所需要的核心技能开展，不深究材料中所涉及的专业内容本身。例如，有一篇文章讨论关于男孩和女孩的数学能力差异问题。文中提到，有些带有偏见的研究者认为，虽然在中、小学女孩的解题能力和数学考试成绩与男孩不分高低，但女生在解答高深数学问题方面依然不如男生。他们所指的高深数学问题不是二阶导数之类的问题，而是像那种找到一致连续性证据之类的问题。英语课堂教学中要避免把时间花在解释“二阶导数”、“一致连续”等专业概念本身的意思上，而是要培养学生甄别和处理专业术语的能力，读出作者的意图和论述方法，作者为什么要提到这些数学术语，这些术语对男女学生数学能力差异问题的论述起到了什么作用。这里所涉及的阅读教学内容包括区分论点与论据、判断句子之间的逻辑关系、了解逻辑关系的表达形式、区分文中的专业词汇和通用词汇、通过上下文判断词义等核心技能。应该指出的是，在不偏离语言教学轨道和目标的前提下，应鼓励学生课下探究感兴趣的专业问题，并将所学的语言技能用于专业学习以及专业文献的阅读与写作中。

## 2. 突出各学期各阶段教学重点

本套教材共四册，分为基础篇、提升篇、拓展篇和应用篇，供四个学期使用，每学期 64 学时。无论是宏观教学目标还是具体教学内容，每学期都有突出的重点。从宏观目标看，第一学期主要是转变学生的英语学习理念，调整英语学习和习惯，重点培养学生用英语获取和交流信息的意识，通过小组活动形式创造真实思想交流环境，先解决因自信不足而难以张口的问题。在此基础上，通过第二学期的提升和第三学期的拓展阶段之后，才将宏观目标自然过渡到学术文献的读与写的基本能力发展方面。具体教学任务和微观技能培养也分阶段、分步骤有条不紊地完成。例如，最基本的学术能力（包括学术英语能力）之一是批判性阅读学术文献、提出学术研究问题的能力。为了培养这



一宏观目标或具备这种能力，写出一篇文献综述，不能急于求成地直接阅读专业文献。特别是对大学低年级学生来说，应该从与学生的学习生涯密切相关的内容着手，从适应真实英语语篇和通俗化的学术语篇开始，逐渐过渡到学术性强的内容。在技能培养方面，从总结段落大意开始，到总结章节、全文大意，最后过渡到总结学术论文的论点、研究方法和研究结果等，使学生水到渠成地完成查阅专业文献、记笔记、撰写文献综述等预期任务。

### 3. 满足不同学生的语言发展需要

本套教材采用了从输入到产出、以读促写的基本理念，输入量较大，练习类型较多，难易程度不等，供教师根据学生的情况选择使用。虽然使用同一套教材，但基础不同的学生在完成学习任务的数量和质量上会有较大区别。例如，阅读和听力材料输入量大的学生，获取的信息更多，写作和讨论时可以利用的信息和模仿的语言就会更丰富。若学生时间有限，可以只完成部分阅读与听力任务，如阅读每单元的前一两篇课文，完成阅读理解任务。特别是到了拓展和应用阶段，基础较好的或时间允许的学生可以运用所学的技能，阅读本专业的文献，撰写阅读笔记和文献综述，而时间有限的学生可以只完成教材中的基本学习任务。

听力材料的难度和长度有差异，可要求学生根据自己的情况决定听哪些、听几遍。但在听力遇到困难的时候，不要依赖文本材料，因为多数听力材料是口头文体，并不是用来“读”的。口头话语有很多冗余信息，也不如书面语篇通顺、流畅和严谨，应多听几遍来逐渐适应真实的口头文体和正常语速。特别是基础篇的听力材料虽然语速快，但一般都很短，适合反复听。考虑到新生的背景不同，第一学期的听力练习以填空形式居多，不会太难。有少量简答题和做笔记的练习，可以根据问题或提示抓住主要信息和要点即可。

### 4. 注重培养自主学习能力和终身学习理念

英语学习的成败在很大程度上取决于课后的自主学习能力、方法和语言实践。教师的角色是引路人和指导者，其重要责任是指导学生学会学习，使课堂学习活动成为课下自主学习活动的示范。本套教材设计了大量有助于培养自主学习能力和习惯的任务。例如，在外语阅读中总会遇到生词的问题，对生词的处理是一个很重要的微观技能。本套教材中设计的第一个任务就是通过观察例句、借助自己的词汇知识和语法知识来判断生词的用法，而不是每个生词都查词典或由老师讲解。词块学习也是如此，教师需要在第一单元详细讲解词块的具体范例、词块在语篇构建中的作用、词块学习方法等，而随后的练习便不需要在课堂上一一讲解了，在课堂上只解决难点。关于专业词汇和通用词汇的区分，教材中标出了典型的例子作为讲解的内容，学生可以根据这些例子识别文中其他的专业词汇。掌握了这些基本技能，在阅读专业文章时，可能只需要查极少数关键词语，而其他专业词汇都可以根据词汇知识和上下文判断。

### 5. 使教师角色与信息社会的教育环境相适应

调整传统的教师角色既是学术英语课程的特征，也是信息社会对教师的新要求。首



先，由于学生获取知识的渠道多样化，网络上和市场上充斥着学习资源和参考资料，因此，英语教师有责任在浩如烟海的语言材料中挑选适合教学对象和教学目标的材料。更重要的是，在信息社会学习不受时间和场所限制的情况下，教师应最大限度发挥课堂教学的优势，解决学生自己或互联网解决不了的学习难点和典型问题，并提供具有讨论价值的材料，提出具有讨论价值的问题，引发学生的学习热情与兴趣，促进学生批判性思维方式和协作式学习精神的形成。

基于上述理念，教材中很大一部分学习任务 and 课堂活动的目的在于激发学生的语言学习动机，创造语言交流氛围，展示语言学习和实践的方法，是“以学习为中心”理念的具体体现。完成这些任务的过程本身（如小组讨论、做读书笔记、总结中心思想等）就是语言学习和实践过程。有些问题没有“标准答案”，答案是开放的、主观的或探索性的。本书中提供的答案仅供参考，学生给的答案会更灵活、更有创造性，甚至令人惊喜，应鼓励学生提出自己的见解和观点。由于我们水平有限，考虑不周，书中各种问题难免，敬请各位师生批评指正。联系方式：[bitesp@163.com](mailto:bitesp@163.com); [2461168906@qq.com](mailto:2461168906@qq.com)。

使用本套教材的教师都是具有使命感、时代感和创新精神的英语教学改革先驱和探路者。衷心希望教师们走出一条适合各校人才培养模式的英语教学改革成功之路。

编者  
2015年春

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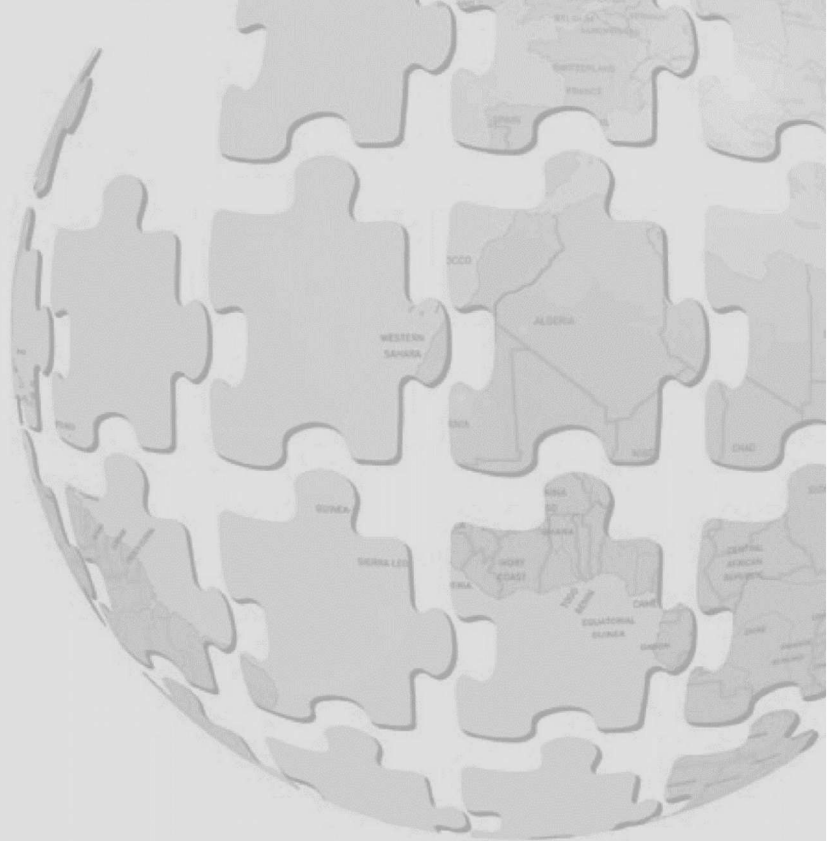




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# 基础篇

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- Unit 1 What Are Your Reasons to Become a Scientist or Engineer?
- Unit 2 Are Children Born Scientists or Engineers?
- Unit 3 What Makes a Successful Scientist or Engineer?
- Unit 4 Is There a Divide Between Sciences and Humanities?
- Unit 5 What Are the Strategies to Keep Yourselves Motivated?
- Unit 6 Why Is Honesty the Best Policy in Science?
- Unit 7 Is Necessity Invention's Mother or Vice Versa?
- Unit 8 What Are Your Dream Teams Like?
- Unit 9 Should Scientists Change Their Minds?
- Unit 10 How Has the Digital Age Changed Your Lives?
- Unit 11 Are You a Multitasker or Singletasker?



## Unit 1

# What Are Your Reasons to Become a Scientist or Engineer?

*Task 2: Write one sentence to summarize each scientist's main reason(s) to pursue a career in science. Make sure to use a complete sentence. The following is an example.*

	Name	The main reason(s)
1)	Preston Cloud	He showed more interest in geology than in anything else.
2)	Jerome Bruner	He was curious about the human mind.
3)	Harry Shipman	He was fascinated about the natural world.
4)	Walter A. Hill	He had a strong desire to be a role model for blacks.
5)	Malak Kotb	He was interested in experiments and influenced by his father.
6)	Marcia McNutt	He was curious about science and he had a sense of responsibility (someone has to do it).
7)	Masakazu Konishi	His personality and early education influenced his choice.
8)	Edward Teller	Math and quantum mechanics are appealing to him.
9)	Peter Denning	He had a strong interest in and deep commitment to science.
10)	Benoit Mandelbrot	Family tradition influenced his choice.
11)	Ruth Sager	He was fascinated about science and its challenges.
12)	Anne Kernan	Her parents' influence determined her choice.
13)	Walter Massey	The desire to change his situation and his love for physics are the reasons.
14)	Rudolf Peierls	His fascination about science and technology is the reason.
15)	Michael Turner	Good school education influenced his choice.
16)	George Schaller	His love for animals was the main reason.

*Task 3: List the different lexical chunks that are often used to express your enthusiasm for an activity or a subject.*

- 1) Show a strong interest in
- 2) Have great enthusiasm for



- 3) Be fascinated by
- 4) Be curious/passionate about
- 5) Be intrigued by
- 6) Be into
- 7) Be absorbed/engrossed in
- 8) Be gripped/riveted by
- 9) Be enthralled by
- 10) Be keen on
- ...

**Task 4: Figure out the meaning of the following set expressions or lexical chunks according to the context in Text II. Use each of them to write a short sentence.**

Lexical chunks refer to the combination of two, three, four, or more words that recur commonly in texts. The patterns in which words occur together have been named in many ways: “collocation,” “phrases,” “formulaic language,” “formulaic sequence,” “lexical bundles,” “lexical units,” “fixed-word combination,” “fixed expressions,” “prefabricated patterns,” “a multiword lexical chunk,” “a formulaic sequence,” “a prefab,” etc. Researchers such as Biber & Conrad (1999) found that in both conversation and academic writing, an important proportion of discourse is made up of recurrent lexical chunks. It can be assumed that students’ language competence is reflected in their correct and frequent use of lexical chunks.

- 1) capture my imagination

Space exploration has captured my imagination since I was a child.

- 2) spark an interest in

My teacher’s questions sparked my interest in scientific exploration.

- 3) miss an opportunity

I never miss an opportunity to practice English.

- 4) pour facts into my head

I hate classes that pour facts into my head and give me no time to think on my own.

- 5) come up with the ideas

If you come up with an idea/a suggestion/a solution, please let me know.

- 6) get caught up in the challenge

I got caught up in the challenge of figuring out ways to determine what was inside the black box. It turned out to be a candle.



**Task 7: Read Text III carefully and explain why English is both easy and difficult.**

English is easy to learn, because	English is difficult to learn, because
<ol style="list-style-type: none"> <li>1) The basic English grammar is ridiculously easy to master.</li> <li>2) A regular English verb has a grand total of only four forms: <i>walk, walks, walked, and walking</i>. The most irregular verb in the language, <i>to be</i>, has only eight forms: <i>be, am, is, are, was, were, being, and been</i>.</li> <li>3) Even English irregular verbs are simple. They all come from Old English and are all irregular in the same way: they change the radical to express the past and perfect tenses. Thus <i>swim, swam, swum</i>. All the irregular forms of all the irregular verbs in English can be listed on less than a page of a paperback dictionary.</li> <li>4) English nouns are equally easy to deal with. They have no gender, for instance.</li> <li>5) Written and spoken forms of English are not so different from each other.</li> </ol>	<ol style="list-style-type: none"> <li>1) It has irregular spelling and pronunciation.</li> <li>2) English has a lot of phonemes and especially a lot of different vowel sounds.</li> <li>3) English just doesn't like diacriticals.</li> <li>4) English is orthographically conservative. When a word is borrowed into English, we tend to maintain the spelling of the foreign word even as we adapt the pronunciation to the English sound structure.</li> <li>5) Vocabulary is so immense.</li> <li>6) English abounds in synonyms, each with its own slightly different nuance or meaning. Learning the subtle differences in meaning is a chore for foreigners.</li> <li>7) Nouns originating from Anglo-Saxon often have associated adjectives that come from Latin or Greek.</li> <li>8) English has the maddening habit of using the same word to mean many different things.</li> </ol>



**Task 9: Listen to an audio clip about dreams and imitate the pronunciation, intonation, stress and rhythm of the speakers.**

([http://www.bbc.co.uk/worldservice/learningenglish/webcast/070927\\_dreams/](http://www.bbc.co.uk/worldservice/learningenglish/webcast/070927_dreams/))

**Task 10: Listen to another clip about dreams and fill in the blanks with the words you hear. Listen again and read aloud by imitation.**

([http://www.bbc.co.uk/worldservice/learningenglish/webcast/070927\\_dreams/](http://www.bbc.co.uk/worldservice/learningenglish/webcast/070927_dreams/))

- My dream is to travel to India.
- Her dream is to meet a handsome, sensitive man.
- Every week, I dream of winning the lottery.
  
- I have a dream that my four children will one day live in a nation where they will not be judged by the colour of their skin but by the content of their character. (Martin Luther King,



Jr., one of the main leaders of the American civil rights movement)

- You may say I'm a dreamer, but I'm not the only one. I hope someday you will join us, and the world will live as one. (John Lennon, musician, Beatles member)
- Dream no small dreams for they have no power to move the hearts of men. (Goethe, German writer)
- I only have one ambition and that's to set up my own company.
- I only have one aspiration and that's to set up my own company.

**Task 11: Note down the key words in the interview with a business coach, speaker and consultant, whose childhood dream was to become a super model.**

(<http://www.npr.org/podcasts/510086/wfuv-s-cityscape>)(August 31, 2013)

Notes:

- 1) You recently decided to take stock of your childhood dreams and see how they played out in your life. What prompted you to carry out that exercise?  
Key words: Old pictures, junior high school, high school...
- 2) How close did you come to living out your dreams?  
Key words: Not related to childhood dreams, but excited, dreamed to be a super model, in a sense yes.
- 3) Why do you think an exercise like that is important to look back what you hoped to become and look at the reality today?  
Key words: A good check, living authentically, fulfilled, joy, adult, not to lose track.
- 4) Why do you think it is a lot of us never fulfill our childhood dreams?  
Key words: Don't plan, forget, think how to move from point A to point B and what to do, take steps, dream big.

**Task 12: Note down the key words in the interview with a professional ballet dancer who is living out her childhood dream.**

(<http://www.npr.org/podcasts/510086/wfuv-s-cityscape>)(August 31, 2013)

- 1) How long have you been a professional ballet dancer?  
Key words: Since 14.
- 2) When did you realize that you actually wanted to do that for a living?  
Key words: About 10, not going to college, not normal job, strong willed.
- 3) How did you get there in just 4 short years?  
Key words: Try, hard work, intense training, German teacher, appealing, glamorous,



passionate, support from parents.

- 4) You were born in South Korea and adopted by a family in California, how did that shape your aspiration?

Key words: Lucky, opportunity, grateful.

- 5) What was that first professional opportunity before you when you were 14 years old?

Key words: Dancing in Saint Barbara, competition, Director of ABT (American Ballet Theatre), offered contract.

- 6) Do you see yourself as a role model for other young girls out here who have these similar dreams?

Key words: Yes, hard on myself, perfectionist, work hard.

**Task 13: Answer the following questions about the importance of correct pronunciation.**

- 1) What are the things you should study and practice when learning a language?

Vocabulary and grammar, skills such as reading, writing and speaking.

- 2) Why is pronunciation important?

To be understood when they speak to others. They don't want their words to be mistaken for other words because they haven't pronounced them very well.

- 3) What is good pronunciation?

Clear and comprehensible, not placing a strain on the listener.

- 4) Does good pronunciation mean a perfect imitation of a particular native-speaker accent?

Not necessarily.

- 5) Should students aim to sound like a native speaker?

Not essential to sound like a native speaker—lots of acceptable native speakers.

- 6) What does the interviewee say IS important?

To understand native speakers. Their speech will be fast and fluent and may cause difficulties.

**Task 14: Answer the following questions briefly based on an interview about the question "what makes us human."**

(<http://www.bbc.co.uk/programmes/b04yb2x4>)

- 1) What makes us human?

Language.

- 2) What is the use of language?

It makes us human. It makes us express our humanity.

- 3) What does language enable us to do?





- I can talk to you about things you cannot see, or hear, touch, taste, or smell.
- I can take you beyond the present moment; language gives us mental time travel.
- Story-telling makes us different from other species. Language enables us to create minds, the virtual world, that doesn't exist out there, the spiritual world that causes the fundamental core of all these forms of story-telling that are central to human culture as we know it.