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## English for Technical Specialities



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Учебное пособие содержит аутентичные тексты по различным специальностям, лексический материал (термины), необходимые для базового уровня профессиональной коммуникации, а также упражнения для активизации данного материала.

Пособие предназначено для студентов второго курса всех специальностей ТГАСУ.

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## ПРЕДИСЛОВИЕ

Предлагаемое учебное пособие подготовлено для студентов второго курса всех специальностей ТГАСУ. Основной целью данного периода обучения является развитие умения работы с аутентичным текстом по специальности. Для этого предлагаются различные формы аудиторной и самостоятельной работы: чтение, перевод, пересказ, обсуждение, поиск информации и т. д. Пособие состоит из шести тем, каждая из которых включает в себя текст и упражнения. По тематике пособия составлен толковый словарь. Данное пособие содержит лексический материал (в том числе термины), необходимый для базового уровня профессиональной коммуникации, выражения и словосочетания для подготовки пересказа или реферирования текста. В целях лучшего управления учебной деятельностью, все упражнения построены на основе дифференцированного отбора языкового и текстового материала.

В процессе обучения формируются следующие, предусмотренные Федеральным государственным образовательным стандартом (ФГОС-3), компетенции:

ОК-2: умение логически верно, аргументированно и ясно строить устную и письменную речь.

ОК-12: владение одним из иностранных языков на уровне не ниже разговорного.

ПК-7: владение одним из иностранных языков на уровне профессионального общения и письменного перевода.

ПК-17: знание научно-технической информации, отечественного и зарубежного опыта по профилю деятельности.

В результате освоения дисциплины обучающийся должен:

**Знать:** 1. Лексический минимум в объеме 4000 учебных лексических единиц общего и терминологического характера, необходимого для возможности получения информации из зарубежных источников (для иностранного языка).

2. Основные грамматические явления, характерные для профессиональной речи.

**Уметь:** Читать литературу по специальности с целью поиска информации без словаря, переводить тексты по специальности со словарем.

**Владеть:** Способами и приемами деловых коммуникаций в профессиональной сфере.

## Unit 1. ENGINEERING

### What is engineering?

Engineering is based principally on physics, chemistry and mathematics and their extensions into materials science, solid and fluid mechanics, thermodynamics, transfer and rate processes and systems analysis. Engineering as profession involves different tasks. It can refer specifically to the manufacture or assembly of engines, machine tools and machine parts. It is also used more generally to describe the creative application of scientific principles to design, develop, construct and forecast the behavior of structures, apparatus, machines, manufacturing processes and works.



**Branches of engineering:** chemical, civil, electrical, electronic, highway, hydraulic, industrial, mechanical, mining, petroleum production.

**Equipment in engineering:** boiler, crane, gas engine, machine tool, pump, turbine.

**Processes in treating metals:** anneal, anodize, electroplate, forge, found, galvanize, grind, harden, mint, plate, roll, soften, temper, tinplate.

**Notice the following adjective endings:**

-al \* chemical \* mechanical \* physical \* structural

-ial \* industrial

-ic \* electronic \* hydraulic

**Notice the following verb endings:**

-en \* harden \* soften

-ize \* anodize \* galvanize

**Notice the following nouns which are a plural form but are normally used with a singular verb:** mathematics, mechanics, physics, thermodynamics.

***Match the following verbs with the correct definition.***

anneal	a) to polish or sharpen by rubbing on a rough surface, e.g. stone
temper	b) to melt metal and then pour it into a form, e.g. iron components
anodize	c) to cover one metal with a thin layer of another, e.g. silver plate
soften	d) to give a metal a protective coat by using it as an anode in electrolysis, e.g. car components
electroplate	e) to make thin sheets of metal by passing it between large rollers, e.g. steel
forge	f) to shape metals by heating and then hammering, e.g. horse shoes
grind	g) to protect from rusting by coating in zinc, e.g. food cans
plate	h) to cover with a thin layer of metal using electrolysis, e.g. car components
roll	i) to make something softer, e.g. fibres
found	j) to make materials tough by cooling them slowly, e.g. glass
galvanize	k) to heat and then cool metals to obtain the required hardness and elasticity, e.g. steel

***Complete the following sentences with a form of the word in brackets.***

1. In the \_\_\_\_ industry, \_\_\_\_ develop processes for producing plastics, fibres, medicines, etc. from simple chemicals (chemistry).

2. Excavators and power shovels are two types of \_\_\_\_ equipment used by \_\_\_\_ when they are removing rocks from the ground (mine).
3. Producing steel using the Bessemer process is one of the best-known \_\_\_\_ processes (industry).
4. Certain chemicals are added to glue to \_\_\_\_ it (hard).
5. Most \_\_\_\_ devices need oil as a lubricant (mechanics).
6. Following the earthquake, every building had to be inspected to see whether it had suffered any \_\_\_\_ damage (structure).

***Here is an extract from a speech made by a careers advisor to a group of students choosing their future courses of study at university. Complete the speech by choosing one of the words from the box.***

machines	highway	electronic	mechanical	electrical	chemical
	develop	civil	production	physics	



Engineering students should have an understanding of maths, (a) \_\_\_\_ and chemistry. Working with pharmaceuticals, food, mineral processing and chemical manufacturing, a (b) \_\_\_\_ engineer is trained to understand, design, control and investigate material flows. If you enjoy problem solving and find projects such as the Channel Tunnel and the Three Gorges Dam interesting, (c) \_\_\_\_ engineering may be for you. You will produce creative designs at an economical price while paying due concern to the environment. If your interest is in road building then you may decide to follow a specialized course in (d) \_\_\_\_ engineering. By studying (e) \_\_\_\_ and (f) \_\_\_\_ engineering you learn about the design of complete systems, such as computers, controllers, power and transport systems.

(g) \_\_\_\_ engineers plan, design and (h) \_\_\_\_ a wide range of things: washing machines, cars and spacecraft. (i) \_\_\_\_ engineers work very closely with mechanical engineers, to make new products

at the right price, on time and in the correct quantity. As well as designing and selecting (j) \_\_\_\_ and materials, they also organize people and finance.

***Read this magazine article and choose the correct answers.***

## **Engineering**



Engineering is one of today's fastest growing careers. That's because engineers work in so many areas. Some engineers design roadways. Others inspect very complicated machines. But no matter where they work, they all have two things in common: math and science. Disciplines like mathematics and physics are a must for any engineer. And so becoming an engineer requires extensive study.

Engineers develop fascinating new ideas. These new ideas change the world in big ways. Engineers also create the technologies that make our lives easier. The field of engineering truly is crucial in today's modern world. It is expanding every day, and is a great field to go into.

1. What is the magazine article mainly about?
  - A. the importance of mathematics
  - B. the machines that engineers design
  - C. the work and ideas in engineering
  - D. how new technologies change the world
2. According to the article, which of the following do engineers NOT do?
  - A. design roadways
  - B. analyze machines
  - C. develop new ideas
  - D. create new materials



3. What can be inferred about students of engineering?
- A. They take classes in physics.
  - B. They do not take classes in English.
  - C. They attend an extra year of college.
  - D. They design machines in class.

***Choose the sentence that uses the word in italics correctly.***

- 1. A. *A machine* is a branch of instruction or learning.  
B. *To design* something is to plan how it will look and function.
- 2. A. *To inspect* something is to examine it carefully.  
B. *Mathematics* is a science that studies matter.
- 3. A. *Engineering* is the study of quantity, structure and change.  
B. *To develop* something is to create it or cause it to grow.
- 4. A. *Technology* is a type of machine that makes life easier.  
B. *Physics* is the art of using the knowledge gained by science.
- 5. A. *A machine* is device that has multiple parts and does work.  
B. *A discipline* is a person who applies scientific knowledge.

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