



Учебное пособие:
READ AND SPEAK ENGLISH!

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Учебное пособие по английскому языку
для студентов высших учебных заведений

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Учебное пособие предназначено для студентов очных и заочных отделений неязыковых факультетов высших технических учебных заведений. Цель предлагаемого учебного пособия заключается в развитии иноязычной коммуникативной культуры будущих инженеров. Обеспечивает курс профессионально-ориентированного английского языка для будущих инженеров дополнительным оригинальным материалом. Пособие состоит из аутентичных текстов и сопутствующих им упражнений. Потенциальные лексические трудности снимаются предтекстовыми упражнениями, представленными в сервисе Quizlet. Данное пособие позволяет применять интерактивные, личностноориентированные и иные технологии. Работа с данным учебным пособием способствует расширению научного мировоззрения, акцентирует внимание студентов на межкультурных компонентах иноязычной коммуникации, активизирует познавательную и речевую деятельность, развивает способность сочетать теорию с практикой.

Ключевые слова: английский язык для специальных целей, инженерное дело, коммуникативная иноязычная компетенция инженеров.

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Учебное пособие предназначено для студентов очных и заочных отделений неязыковых факультетов высших технических учебных заведений.

Цель предлагаемого учебного пособия заключается в развитии иноязычной коммуникативной культуры будущих инженеров. Обеспечивает курс профессионально-ориентированного английского языка для будущих инженеров дополнительным оригинальным материалом.

Пособие состоит из аутентичных текстов и сопутствующих им упражнений. Потенциальные лексические трудности снимаются предтекстовыми упражнениями, представленными в сервисе Quizlet.

Данное пособие позволяет применять интерактивные, личноориентированные и иные технологии. Работа с данным учебным пособием способствует расширению научного мировоззрения, акцентирует внимание студентов на межкультурных компонентах иноязычной коммуникации, активизирует познавательную и речевую деятельность, развивает способность сочетать теорию с практикой.

Следующие положения легли в основу разработки настоящего учебного пособия:

1. Язык учебного пособия – английский.
2. Необходимый уровень владения языком – В1+.
3. Учебное пособие ориентировано на выполнение коммуникативных заданий.
4. Семантизация лексических единиц – беспереводная.
5. Отсутствие грамматического материала и, соответственно, видов упражнений с грамматической направленностью.
6. Использование Инфографики (способ визуализации данных, графический способ подачи информации, данных и знаний).
7. Структура учебного пособия:
 - Infographic.
 - Discussion.
 - Reading.
 - Language.
 - Discussion.
 - Production

8. Разработка заданий на основе аутентичных текстов для чтения, упражнений на понимание прочитанного с последующим обсуждением.

9. Наличие актуальных тем для изучения будущими инженерами: Engineering as a profession of the future, Modern technology, Achievements of the modern engineering, Chemical engineering, Civil engineering, Electrical engineering, Mechanical engineering, etc.

10. Раздел “Production” предполагает создание речевого продукта (устного или письменного).

11. В каждой теме представлен словарь-активатор лексических единиц, необходимых студенту с целью реализации коммуникативного намерения по тематике.

12. Ориентация пособия на использование средств Информационно-коммуникационных технологий (ИКТ) варьируется:

– Минимальный уровень ИКТ-ориентации: ссылки в учебном пособии на упражнения в сервисах Quizlet, Quia, Daily Infographic, Mindomo, Glogster, Webquest, Prezi, Padlet.

– Максимальный уровень ИКТ-ориентации: создание речевого продукта в разделе “Production” с использованием средств ИКТ.

Пример урока

UNIT 1. ENGINEERING AS A PROFESSION OF THE FUTURE

*Success does not consist in never making mistakes
but in never making the same one a second time.*

George Bernard Shaw

INFOGRAPHIC

1. Study the Infographic Poster: “The world’s most costly engineering mistakes” examining the samples of mistakes, both in terms of the financial and human cost, at <http://www.dailyinfographic.com/devastating-engineer-mistakes-in-history>

Answer the questions: “What were the engineering mistakes in the given examples?” and “What should be done to avoid such mistakes in the future?”. Share the ideas with your fellow students.

DISCUSSION

2. Work in pairs. Discuss the questions given below. Share your ideas with your groupmates.

- 1) Who is an Engineer and what is his/her their role in the society?
- 2) What is engineering?
- 3) What branches could engineering be divided into?
- 4) What are the prospects of engineering?
- 5) Why did you choose this profession and what do you want to achieve in it?

READING

3. In pairs or small groups, read the article below quickly and decide whether these sentences are true (T) or false (F).

- 1) Institutions are recommended to take benefits of adaptable accreditation criteria in developing curricula.
- 2) University education should train engineers who can not only identify but also settle issues.
- 3) Civil engineers would be entrusted by organisations to descend the global quality of life.
- 4) The professional engineer of the future will be the clear misfit of projects, integrate technology and resources.
- 5) Many of the tedious engineering tasks in future projects won't need a professional engineer.

EDUCATING THE ENGINEER OF 2020

To prepare the engineer of 2020 for that challenging future, the National Academy of Engineering (NAE) undertook an in-depth study of how engineering education would have to change. Among the several recommendations:

- The bachelor's degree should be considered a pre-engineering or "engineer in training" degree.
- The master's degree should become the recognized engineering "professional" degree.
- Institutions should take advantage of flexible accreditation criteria in developing curricula

and expose students to the essence of engineering early in their undergraduate experience.

- University education should produce engineers who can both define and solve problems.
- Institutions must teach students how to be lifelong learners.

Engineering undergraduate programs should introduce interdisciplinary learning and use case studies of both engineering successes and failures as a learning tool.

THE VISION FOR CIVIL ENGINEERING IN 2025

The American Society of Civil Engineers (ASCE) organized a gathering of thought leaders from diverse backgrounds and countries – civil engineers, engineers from other disciplines, architects, educators, and other leaders – to ask: What will the civil engineering world be like in 2025? What aspirational role will civil engineers play in that radically transformed world?

The answer professes a new role for the civil engineers of tomorrow, reflecting a new level of leadership and professionalism. Civil engineers would be entrusted by society to achieve a sustainable world and raise the global quality of life. To earn that confidence, civil engineers, as a body of professionals, would exhibit a mastery in five key areas:

- Planners, designers, constructors, and operators;
- Stewards of the environment;
- Innovators and integrators of technology;

- Managers of risk;
- Leaders in public policy.

As the civil engineering profession moves towards the goals of Vision 2025, the make-up of the engineering team may change as well. The professional engineer of the future will be the clear leader of projects, integrate technology and resources, and spearhead the interface with the owner and the public – but there may be fewer professional engineers on individual project teams. With the ever increasing sophistication of engineering software, many of the routine engineering tasks in future projects will not require a professional engineer. That work can be performed well and economically by unlicensed individuals under the responsible charge of new engineer leaders – a strategic allocation of engineering graduates, degreed technologists, and technicians.

4. Refer to the article and answer these questions with a partner:

- 1) What are the recommendations given by the NAE concerning the change of engineering education?
- 2) What will an aspirational role of civil engineers be from the ASCE point of view?
- 3) What kinds of engineering tasks in the future will not require a professional engineer?

LANGUAGE

5. Study the new vocabulary (flashcards can be found: <https://quizlet.com/264691453/flashcards>).
6. Practice the new vocabulary: <https://quizlet.com/264691453/learn>
7. Write a dictation: <https://quizlet.com/264691453/spell>
8. Have some fun:
match-game: <https://quizlet.com/264691453/match>
gravity-game: <https://quizlet.com/264691453/gravity>
9. Take a test: <https://quizlet.com/264691453/test>
10. Fill in the gaps in the text below with the following words: impact, dynamically, pursuit, multidisciplinary, opportunities, intensely, to permit, innovation, rapid, nanotechnology, political, communication skills, education, humankind, engineer, to evolve, analytical, economic growth, to anticipate, to provide.

THE ENGINEER OF 2020

The National Academy of Engineering (NAE) asks an important question: Does it serve “the nation well _____ the engineering profession and engineering _____ to lag technology and _____? Rather, should the engineering profession _____ needed advances and prepare for a future where it will _____ more benefit to _____? Likewise, should engineering education _____ to do the same?”

The NAE report “The Engineer of 2020” paints a picture of a _____ changing and evolving world. In 2020, technological _____ will continue its _____ pace; the world will be _____ interconnected; those involved with technology will need to be _____; and social, cultural, _____, and economic forces will _____ technological innovation. Ever-shorter product development cycles through innovation will help drive society’s _____ and remarkable _____ will arise through new developments in _____, logistics, biotechnology, and high-performance computing.

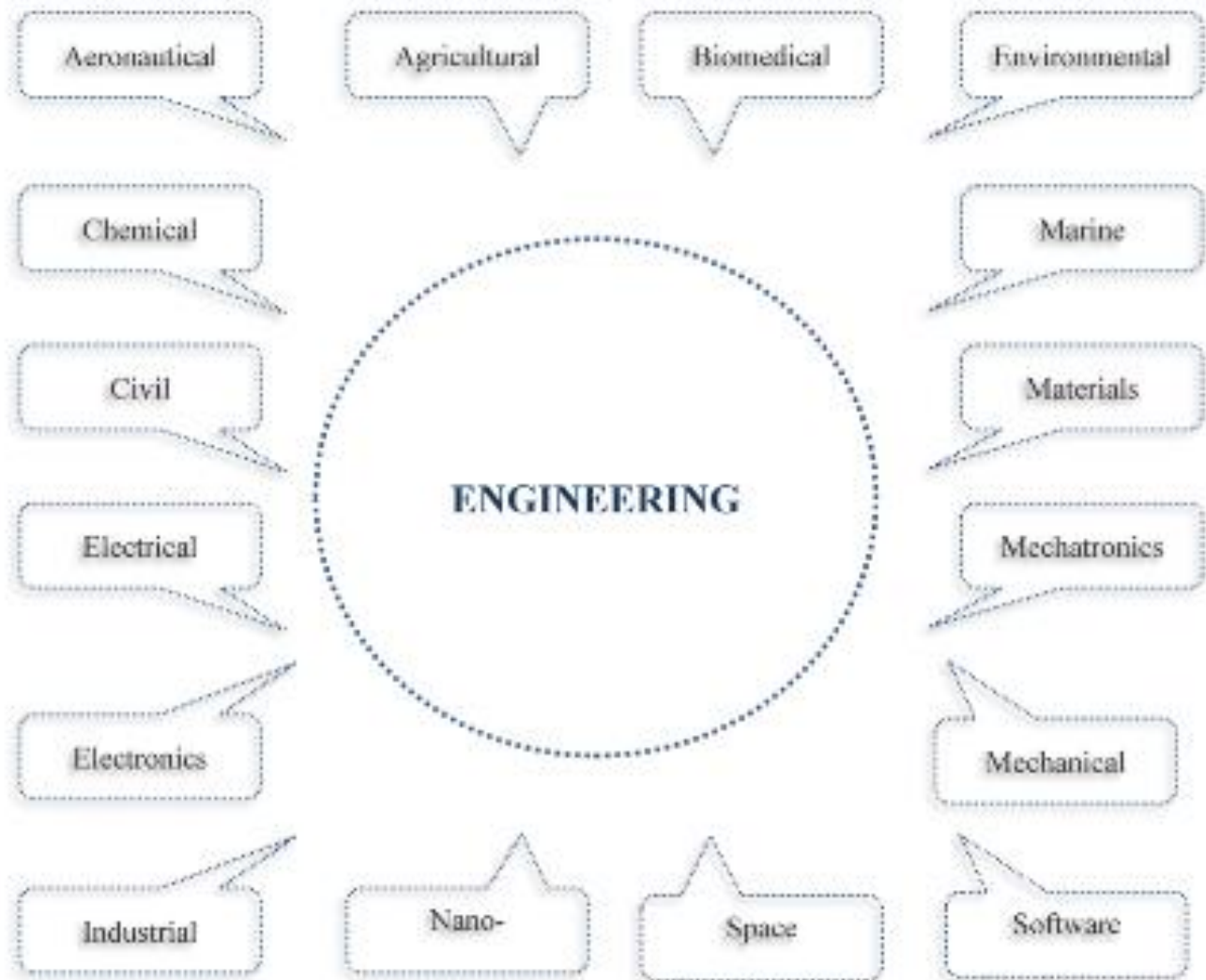
The successful future _____ will need strong _____ skills, practical ingenuity, creativity, good _____, business and management knowledge, leadership, high ethical standards, professionalism, dynamism, agility, resilience, flexibility, and the _____ of lifelong learning, the report says.

11. Jumbled words. Rearrange the letters to make words and match them with the definitions:


1. ianinonvot **A** the ability to invent things or solve problems in clever new ways
2. nierleseeci **B** the introduction of new things, ideas or ways of doing smth.
3. utneiygin **C** the ability of people/things to feel better quickly after smth. unpleasant

DISCUSSION

12. Work in pairs. Choose any two types of engineering and try to make a list of things which can be made possible in the future in these spheres. Add some interesting facts (e.g. innovations, interest and infinite possibilities, etc.). Be ready to share your ideas with the class.



13. Brush up your talk. Speak about the most important engineering problem(s) we are going to face in the near future? Prove your point of view.



14. In small groups, establish advantages and disadvantages of engineering as a profession of the future. Try to persuade the others in your group. Make a list. Compare it with the other groups.

15. Discuss the statements below. Do you agree or not? Why?

- 1) Engineering is often compared to medicine and law in discussions of professional status.
- 2) Engineers have the unique role of solving social problems through the use of machines, devices, systems, materials and processes.
- 3) Engineers should study engineering ethics.
- 4) Scientists and engineers of any professional level are supposed to be able to properly state aims and objectives both in the oral and written forms.
- 5) Engineers have the skills to turn products of the imagination into real-world innovation.

PRODUCTION

- 16. Visit site: <http://edu.glogster.com> and create your own multimedia poster. Demonstrate it to your class.**

- 17. Write an Internet article on the topic “The future is full of new opportunities for engineers”.**

- 18. Make a presentation of a lexical mind map concerning Engineering with the help of the site: <https://www.mindomo.com>.**

- 19. Create a write-up concerning “Engineering” (up to 100 words). Publish it at <http://padlet.com>.**

- 20. Choose any type of engineering mentioned in Exercise No. 12 and give a talk on the matter?**

Self-assessment: How successfully have you achieved the lesson outcome? Give yourself a score.

1. – Not so well. I need more practice.

2. – I know this well.

3. – I know this very well. I am confident in my knowledge.