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**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ
ФЕДЕРАЦИИ**

**Федеральное государственное автономное образовательное учреждение
высшего образования**

«СЕВЕРО-КАВКАЗСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ»

Институт сервиса, туризма и дизайна (филиал) СКФУ в г. Пятигорске

**МЕТОДИЧЕСКИЕ УКАЗАНИЯ ПО ВЫПОЛНЕНИЮ ПРАКТИЧЕСКИХ РАБОТ
ПО ДИСЦИПЛИНЕ «Иностранный язык в профессиональной сфере»**

Пятигорск, 2021

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Методические указания по выполнению практических работ рассмотрены и утверждены на заседании кафедры лингвистики и межкультурной коммуникации

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ВВЕДЕНИЕ

Методические указания предназначены для студентов 2 курса бакалавров заочной формы обучения, которыми они могут пользоваться при подготовке к практическим занятиям. Практические занятия это планируемая учебная, учебно-исследовательская, а также научно-исследовательская работа студентов, которая выполняется в аудиторное время под руководством преподавателя. В составе методических указаний к практическим занятиям предусмотрены рекомендации по подготовке к практическому занятию. При выполнении работы студенты могут использовать не только методические указания по решению задач, но и другие материалы учебно-методического комплекса.

Дисциплина «Иностранный язык в профессиональной сфере» ориентирована на:

- * развитие навыков понимания устной речи общей и профессиональной тематики, включая понимание речи носителей языка и восприятие речи с медиа-источников;
- * понимание особенностей стилей общения в рамках деловых ситуаций и ситуаций повседневного общения;
- * преодоление языкового барьера и улучшение навыков разговорного английского языка;
- * повышение грамотности устной и письменной речи;
- * расширение активного словарного запаса по тематике общего и профессионального английского языка по профилю подготовки;
- * повышение общего уровня владения языком.

Целью освоения дисциплины «Иностранный язык в профессиональной сфере» является формирование у студентов компетенций УК-4 как основы профессиональной подготовки для реализации своих способностей в общении на иностранном языке и готовности использовать их в профессиональной деятельности.

Задачи освоения дисциплины: овладение основами профессионального общения на иностранном языке в устной и письменной форме, расширение активного словарного запаса по тематике общего и профессионального английского языка, формирование коммуникативных компетенций.

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Владеть:

- навыками профессионального общения на английском языке;
- способами пополнения профессиональных знаний из оригинальных источников на английском языке.
- готовностью к работе в контактной зоне с потребителем, консультированию, согласованию вида, формы и объема процесса сервиса на иностранном языке;
- навыками перевода профессиональной литературы с иностранного языка на русский язык;

СОДЕРЖАНИЕ ПРАКТИЧЕСКИХ ЗАНЯТИЙ

РАЗДЕЛ 1. FIELDS OF CIVIL AND INDUSTRIAL ENGINEERING / ОБЛАСТИ ГРАЖДАНСКОГО И ПРОМЫШЛЕННОГО СТРОИТЕЛЬСТВА

Практическое занятие №3.

Тема 3. “Engineering and Its Present Status” / Строительство и его современное состояние.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

Vocabulary

1. to shape , v - принимать форму
2. to fit, v - устанавливать
3. to stand up v - выдерживать
4. to break v - разрушать
5. to catch fire v - загореться
6. to define v - определять
7. to deal with, v – иметь дело с
8. to lay the foundation, v – закладывать фундамент
9. to enable v - давать возможность
10. execution n - выполнение
11. engineering techniques, n – технические средства
12. factual approach, n – фактический подход
13. strikingly adv - удивительно
14. bulk of engineering, n- объём инженерного искусства
15. to allow v - предоставлять
16. off-the-shelf approach, n – стандартный подход
17. to customize v - выполнять по индивидуальному заказу
18. technical design, n - техническое проектирование
19. environmental compliance, n - соответствие с окружающей средой
20. diversity n - разнообразие
21. affinity n - близость
22. creative adj - творческий
23. to expect v - ожидать
24. tailored adj - приспособленный

25. selective adj–избирательный

“Engineering and Its Present Status”

Engineering is the art and science by which the properties of matter and energy are made useful to man in structures, machines and products. The basis of engineering is knowledge of the materials used, knowledge of how they are made, how they are shaped, how you fit them together, how they stand up to stress, how they break and how they catch fire. Civil engineering is defined as that phase of engineering which deals with the planning, design and construction of projects.

The branch of civil engineering provides for the initial development of natural resources and lay the foundation for other technical progress.

There are greatest opportunities today for civil engineers in construction than at any previous time in the history of our country. These opportunities enable engineer to take a basic part in the conception design and execution of problems which are essential to the growth, development and defense of our country.

The application of engineering techniques to construction makes civil engineering the only factual approach to construction problems.

Engineering is a constantly changing and developing profession. Invention, the adoption of some strikingly new device, method or technique play a part in this continuing evolution. But the great bulk of engineering consists in doing better something that has been done many times before.

Engineering works have been built for the use and convenience of man.

They mark the increasing mastery of man over nature, which has made possible our continuing progress toward a better life.

Engineering tasks nowadays are different from those 10-15 years ago when stable business structures allowed off-the-shelf approach to technical design.

Present designs, by contrast, are increasingly customized and might incorporate such factors as regional diversity reflecting a closer understanding of the market and affinity to the needs of society.

Engineering becomes a very creative profession and global markets today demand creativity.

The most creative and elegant engineering solutions are expected from the engineer combining his knowledge of technology with the demands of business, economics and people. The need to develop products and services faster, cheaper and better than ever before is obvious.

Customers are more selective and require production tailored for specific needs, delivered quickly and anywhere with no reduction in quality.

Builders have constructed the tallest, longest, largest and deepest structures in history.

As a result, mankind in the 21st century is better off with the proper food, sanitation, housing and all material comforts which modern science, engineering and industry can provide.

Вопросы и задания:

Exercise 1. Choose the correct word from the two words given in brackets.

1. Engineering is the art and science by which the properties of matter and energy are made (useless, useful) for man in structures and products.
2. The basis of engineering is (knowledge, skill) of the materials used, their properties and mathematics.
3. Civil engineering deals with (destruction, construction) of various projects.
4. Engineering (works, tasks) have been built for the use and convenience of man.
5. Engineering is a (temporary, constantly) changing and developing profession.
6. There are (more, less) opportunities today for civil engineering in construction than before.
7. Engineering works mark the (increasing, decreasing) mastery of man over nature.
8. Global markets demand (creativity, novelty).
9. The need to develop products faster, cheaper and better is (obvious, premature).
10. (Much, little) is expected of the builders and designers in the future.

Exercise 2. Put the words in brackets in the correct form.

1. She is ... (little) experienced than her friends.
2. Do you think ... (the same as) other members of your group?
3. This article is ... (much difficult) than the previous one.
4. Oxford is one of the ... (old) and (famous) universities in the world.
5. The ... (hard) you work, the (good) the result will be.
6. This problem was ... (little interesting) than I expected.
7. My flat isn't ... big ... yours.
8. That building will be ... (high) in our district.
9. Research opportunities are ... (much wide) today than before.

Exercise 3. Match the words and their definitions.

1. to shape a. particular, certain needs
2. design b. the work of building
3. to deal with c. to make the form of something
4. affinity d. to do business or connection
5. construction e. close likeness or connection
6. approach f. a drawing showing how something is to be made
7. specific needs g. a manner or method of doing something

Exercise 4. Translate the following sentences into Russian.

1. Civil engineering is defined as that phase of engineering which deals with the planning, design and construction of projects.
2. The branch of civil engineering provides for the initial development of natural resources and lays the foundation for other technical progress.
3. Engineering is a constantly changing and developing profession.
4. Engineering works have been built for the use and convenience of man.
5. Builders have constructed the tallest, strongest, largest and deepest structures in history.
6. The application of engineering techniques to construction makes civil engineering the only factual approach to construction problems.
7. The great bulk of engineering consists in doing better something that has been done many times before.
8. The most creative and elegant engineering solutions are expected from the engineer who combines his knowledge of technology with the demand of business, economics and people.
9. Customers are more selective now and require production tailored for specific needs, delivered quickly and anywhere with no reduction in quality.

Exercise 5. Do you agree or disagree with the following opinion?

Use the given phrases:

Yes, I think so I don't think so

I certainly agree with you I doubt it

I am sure you are right I disagree (with you)

1. There are less opportunities today for civil engineers in construction than before.
2. The basis of engineering is knowledge of materials used and mathematics.
3. Civil engineering never dealt with planning, design or construction of various projects.
4. Present designs are very simple but interesting.
5. Engineering tasks nowadays are practically the same as 10 - 15 years ago.
6. Our cities should be comfortable and beautiful.
7. The type and style of dwellings in urban areas depend on natural conditions and local traditions.
8. The problem of the house is the problem of the epoch.

9. People and buildings require sunlight and air.

10. New housing is characterized by the wide expense of glazing and the development of public services and communication.

Рекомендуемая литература.

Перечень основной литературы

1. English for building engineers : учеб. пособие / А.В. Колистратова. – Братск : ГОУ ВПО «БрГУ», 2011. – 92 с.

2. Данчевская, О.Е. English for Cross-Cultural and Professional Communication=Английский язык для межкультурного и профессионального общения : учебное пособие / О.Е. Данчевская, А.В. Малёв. - 6-е изд., стер. - Москва : Флинта, 2017. - 192 с.

3. Английский язык для архитектора и градостроителя: учебное пособие по английскому языку/ Л.А.Зарицкая; Оренбургский гос. ун-т. – Оренбург: ОГУ, 2013. – 116 с.

Перечень дополнительной литературы:

1. Беляева И.В. Иностранный язык в сфере профессиональной коммуникации. Комплексные учебные задания [Электронный ресурс]: учебное пособие/ И.В. Беляева, Е.Ю. Нестеренко, Т.И. Сорогина— Электрон. текстовые данные.— Екатеринбург: Уральский федеральный университет, 2015.— 132 с.— Режим доступа: <http://www.iprbookshop.ru/65930.html>.— ЭБС «IPRbooks»

2. Меркулова Н.В. Английский язык в сфере управления / English for Management [Электронный ресурс]: учебное пособие/ Н.В. Меркулова— Электрон. текстовые данные.— Воронеж: Воронежский государственный архитектурно-строительный университет, ЭБС АСВ, 2016. — 124 с. — Режим доступа: <http://www.iprbookshop.ru/59141.html>.— ЭБС «IPRbooks»

3. Мусихина О.Н., Гисина О.Ф., Яськова В.Л. Английский язык для строителей. Практикум / Серия «Высшее профессиональное образование».—Ростов н/Д:Феникс, 2004. — 352 с.

Перечень ресурсов информационно-телекоммуникационной сети «Интернет», необходимых для освоения дисциплины

- <http://www.biblioclub.ru>

- <http://www.iprbookshop.ru>

- <http://www.catalog.ncstu.ru>

Практическое занятие №4.

Тема 4. CivilEngineering.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

VOCABULARY TO USE

appliance — приспособление, прибор

apply — обращаться (*for* — за помощью, справкой и т.д., *to* — к кому-л.)

branch — ветвь; филиал; отрасль

concern (with) — касаться, относиться; интересоваться

conflict with nature — противоречить природе, бороться с природой

deal (with) — иметь дело с чем-л., кем-л.

distinguish (from) — отличать

execute — выполнять

harbor — гавань

lead (to) — вести (*к*)

sustain] — поддерживать; выдерживать

engine — двигатель

military — военный

nuclear — ядерный

mining — горный, горнодобывающий

marine — морской

rise — возникновение, подъем

utilization — использование

fortification — укрепление

to enrich — обогатить, разнообразить

remarkable — замечательный, отличный

steam — engine — паровой двигатель

growth — рост, увеличение

space — космос

to comprise — содержать

pavement — тротуар

vast — обширный, громадный

extent — степень, мера

Text : “Civil Engineering”

The term "*engineering*" is a modern one. The New Marriam-Webster Dictionary gives the explanation of the word "*engineering*" as the practical application of scientific and mathematical principles. Nowadays the term "*engineering*" means, as a rule, the art of designing, constructing or using engines. But this word is now applied *in a more extended sense.¹ It is applied also to the art of executing such works as the objects of civil and military architecture, in which engines or other mechanical appliances are used. Engineering is divided into many branches. The most important of them are: civil, mechanical, electrical, nuclear, mining, military, marine and sanitary engineering.

While the definition "*civil engineering*" dates back only two centuries, the profession of civil engineer is as old as civilized life. It started developing with the rise of ancient Rome. In order to understand clearly what civil engineering constitutes nowadays, let us consider briefly the development of different branches of engineering. Some form of building and utilization of the materials and forces of nature have always been necessary for the people from the prehistoric times. The people had to protect themselves against the elements and sustain themselves in the conflict with nature.

First the word "*civil engineering*" was used to distinguish the work of the engineer with a non-military purpose from that of a military engineer. And up to about the middle of the 18th century there were two main branches of engineering — civil and military. *The former included

all those branches of the constructive art not directly connected with military operations and the constructions of fortifications, while the latter², military engineering, concerned itself with the applications of science and the utilization of building materials in the art of war.

But as time went on, the art of civil engineering was enriched with new achievements of science. With the beginning of the Industrial Revolution and later there came a remarkable series of mechanical inventions, great discoveries in electrical science and atomic energy. It led to differentiation of mechanical, electrical, nuclear engineering, etc.

It is a well-known fact that with the invention of the steam engine and the growth of factories a number of civil engineers became interested in the practical application of the science of mechanics and thermodynamics to the design of machines. They separated themselves from civil engineering, and were called "mechanical engineers".

With the development of the science of electricity, there appeared another branch of the engineering — electrical engineering. It is divided now into two main branches: communications engineering and power engineering.

In the middle of the 20th century there appeared some other new branches of engineering—nuclear engineering and space engineering. The former is based on atomic physics, the latter — on the achievements of modern science and engineering.

At present there are hundreds of subdivisions of engineering, but they all, at one time or another, branched off from civil engineering.

The term "civil engineering" has two distinct meanings. In the widest and oldest sense it includes all non-military branches of engineering as it did two centuries ago. But in its narrower, and at the present day more correct sense, civil engineering includes mechanical engineering, electrical engineering, metallurgical and mining engineering.

*Here are some fields of civil engineering³:

1. *Housing, industrial and agricultural construction.*

2. *Structural engineering* comprises the construction of all fixed structures with their foundations.

3. *The construction of highways and city streets and pavements.*

4. *The construction of railroads.*

5. *The construction of harbours and canals.*

6. *Hydraulic engineering* which includes the construction of dams and power plants.

The above enumeration will make clear the vast extent of the field of civil engineering.

A few explanations to the text

1.... in a more extended sense — в более широком смысле

2. The former..., while the latter... — первый (имеется в виду из двух упомянутых)..., тогда как последний... (из двух упомянутых)

3. Here are some fields of civil engineering. — Вот некоторые области строительства.

Вопросы и задания:

Exercise 1. Word construction (Different ways to construct words). Translate the words keeping in mind their suffixes and prefixes

military — **non**-military — militarisation; enumerate — enumeration;

decide — decision — decision-maker; invent — inventor—invention;

apply — appliance — application; explain — explanatory — explanation;

build — builder — building —rebuilt; achieve—achievement;

construct — constructor—construction — constructive—reconstruct

Exercise 2. General understanding. Answer the questions

1. What does the word "engineering" mean?

2. Is engineering a science?

3. Into what branches is civil engineering divided?

4. How old is the profession of a civil engineer?
5. What distinct meanings has the term "civil engineering"?
6. What fields of civil engineering do you know?
7. What are the most important branches of civil engineering?
8. What invention laid the foundation for mechanical engineers?
9. When was electrical engineering developed?
10. What are the main subdivisions of the electrical engineering?

Exercise 3 . Find in the text all kinds of engineering and using words from ex. 3, fill the table. Pay attention to some peculiarities of the certain type of engineering and what it deals with

Titles

Definitions

Exercise 4. Explain these phrases, using your knowledge of building terms and new words

- a) the practical application of scientific and math principles,
- b) the art of designing and constructing, using engines,
- c) the objects of civil and military architecture,
- d) utilization of the materials and forces of nature
- e) applications of science and the utilization of building materials in the art of war,
- f) Industrial Revolution and mechanical invention.

Exercise 4. Be ready with a brief report concerning famous and the most interesting structures all over the world, their designers and constructors, some interesting facts about their life

Exercise 4. Compose the conversation for a group of 3-4 students about civil engineering, using information from the text and your report

Follow this plan:

- a) the history of civil engineering,
- b) civil engineering is the art of some sciences and technologies,
- c) some important and interesting facts about famous architects and constructors, their life and achievements.

Рекомендуемая литература.

Перечень основной литературы

1. English for building engineers : учеб. пособие / А.В. Колистратова. – Братск : ГОУ ВПО «БрГУ», 2011. – 92 с.
2. Данчевская, О.Е. English for Cross-Cultural and Professional Communication=Английский язык для межкультурного и профессионального общения : учебное пособие / О.Е. Данчевская, А.В. Малёв. - 6-е изд., стер. - Москва : Флинта, 2017. - 192 с.
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РАЗДЕЛ. EDUCATION AND CAREER OF CONSTRUCTION ENGINEER / ОБРАЗОВАНИЕ И КАРЬЕРА ИНЖЕНЕРА-СТРОИТЕЛЯ.

Практическое занятие №12.

Тема 11. New projects: the architect-engineer-contractor team / Новый проект: Команда архитектор-инженер -подрядчик.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой
Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

- | | |
|--|------------------------------|
| 1.teamn –бригада, команда | 15. magnitude n -важность |
| 2.to interrelate v -взаимодействовать | 16 to cultivate v - |
| 3.triple -тройной | культивировать, поощрять |
| 4.triangeln -треугольник | |
| 5. objective, n = aim, n -цель | 17. final decision, n - |
| 6. in spite of, prep –несмотря на | Окончательное решение |
| 7. to accept v -принимать | 18. estimate n - |
| 8. particular adj -частный | смета |
| 9. discerning adj -проницательный | 19. structural engineer, n - |
| 10.to exist v -существовать | инженер-проектировщик |
| 11.mutual respect, n -взаимоуважение | 20. to be aware of, v - |
| 12. outstanding success, n –выдающийся успех | знать, сознавать |
| 13. to coordinate v -координировать | 21. owner, n - |
| 14. to achieve, v -достигать | владелец, собственник |

22. to secure v -
обеспечивать
23. to suggest v -
предлагать

24. schedule n -
график
25. target n -
задача

“New projects: the architect-engineer-contractor team”.

1 Nearly two thousand years ago the Roman architect Vitruvius listed three basic factors in architecture - convenience, strength and beauty.

These factors are actual today. They are always present and are always interrelated in the best structures.

2 The architect, the engineer and the contractor form parts of a triangle all of which are essential to the completion of a construction project. Together they are working towards the same objective - better construction, better materials, and better design.

In spite of the increased cost of today's buildings as compared with those of

10 years ago, no one would accept a new structure of the older type of design and construction.

One aim, one responsibility, one striking result. The activity of the engineer and the architect in design and construction is of particular interest.

Between competent and discerning practitioners of both professions there exists and should exist a mutual respect for their individual abilities.

In fact, no important building project has been an outstanding success without the respective training experience and skill of engineers and architects coordinated towards a common result.

3 The chief function of the architect is to solve a particular problem of construction in such a way as to achieve a structure or structures with proper and harmonious balance of utility, strength, beauty and economy. If the project is of any magnitude, the conception takes material form through the skill of the engineer.

In such project the engineer must depend on the planning and skill of the architect; the architect - on the construction skill of the engineer. Thus, engineers and architects can cultivate the mutual respect, which will develop the harmony and solidarity of basic professions. In most cases it is the architect who must make the final decisions based on the contractor's estimates of cost, his faith in the structural engineer and his willingness to take a chance with new construction methods. First, the structural engineer must become aware of new developments, must learn how to design the new structure, know the cost of construction and be aware of the esthetic problems of the architect. Then he must suggest structures to the architect talk with the contractor about them and find their advantages and disadvantages.

The following steps are usually taken in putting up a building. The owner, be it a corporation, bank or individual, feels the need for a new building and secures a site. These two fundamental decisions what is to build and where to build are made by the owner, sometimes with architectural or engineering advice.

Then the contractor plans the site layout, prepares the project program, schedules and targets.

The engineer in his turn controls the quality of his structure in two ways – by the specifications he writes into the contract and by the inspection he maintains during construction. These two factors have a significant effect on the productivity of the contractor's organization.

5 As a result of the combined efforts of the engineer, the architect and the contractor, new forms and new methods of construction are developed and three main aims - economic, esthetic and technical, single or in combination, are successfully realized in spectacular building by the architect, the engineer and the contractor, each of which has contributed to this development.

Вопросы и задания.

Exercise 1 Find the English equivalents to the following word combinations in the text.

Три основных фактора; образовывать части треугольника; завершение

строительного объекта; одна цель; взаимоуважение; деятельность инженера и архитектора; прочность; красота и экономия; компетентный практик; материальная форма; мастерство инженера; новые формы; подрядчик; инженер проектировщик; знать, как проектировать; планировать расположение на площадке.

Exercise 2 Write in the number of the paragraph that deals with the following topics:

- архитектура - нелёгкое искусство
- деятельность инженера и архитектора
- стадии возведения здания
- появление новых форм и методов строительства

Exercise 3 Scanning means looking for special information in the text. Scan the text to find information on the following topics:

- the chief function of the architect
- the work of the structural engineer
- the result of the combined efforts of the team
- the formula of the success to be remembered.

Exercise 4. Choose the key sentence from each paragraph.

1. Vitruvius listed three basic factors in architecture - convenience, strength and beauty.
- 2.
- 3.
- 4.
- 5.

Exercise 5. Answer the following questions.

1. By what geometric figure can you express the interdependence in the work of competent practitioners?
a square – квадрат
a circle – круг
a triangle– треугольник
a rhomb - ромб
2. What is your opinion about new projects in Voronezh?
3. Enumerate some of the most interesting projects.
4. How do you appreciate the work of the architect, the engineer and the contractor?
5. What contribution are you going to make when you become a civil engineer?
6. Think of your own questions concerning new projects in Voronezh.
7. What are their advantages and disadvantages?

Рекомендуемая литература.

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РАЗДЕЛ 3. INDUSTRIAL AND CIVIL ENGINEERING.ПРОМЫШЛЕННОЕ И ГРАЖДАНСКОЕ СТРОИТЕЛЬСТВО

Практическое занятие №19.

Тема 19. Town Planning / Градостроительство.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4.

Теоретическая часть:

1. Define meaning of the following English words. Explain them

- | | |
|-------------|-------------|
| description | 1. полный |
| purpose | 2. основной |
| freedom | 3. свобода |
| development | 4. изменять |

to exist	5. движение
society	6. развитие; расширение
recent	7. окружать
needs	8. нужды
to accept	9. описание
to define	10. цель
to connect	11. определять
complete	12. создание
movement	13. существовать
to change	14. приспособлять(ся)
main	15. общество
to adapt	16. соединять
creation	17. принимать
to surround	18. недавний

2. Read the text. Mark which sentences give explanation to the term “master plan”

Town Planning

(1) That cities should have a plan is now admitted in our time of large-scale construction and planmaking has become an everyday activity. The purpose of a town plan is to give the greatest possible freedom to the individual. It does this by controlling development in such a way that it will take place in the interests of the whole population.

(2) The new development absorbs or modifies an existing environment, and so before it can be designed it is necessary to find out about that environment. It is also necessary to do research of the trends of population growth, the distance from work to home, the preferences for different types of dwelling, the amount of sunshine in rooms, the degree of atmospheric pollution and so on. After the survey is complete a forecast of future development is made in the form of a map, or series of maps: the master plan or development plan. As no one can be certain when the development is to take place and since a society is an organic thing, with life and movement, the plan of a city must be flexible so that it may extend and renew its dwellings, reconstruct its working places, complete its communications and avoid congestion in every part.

(3) The plan is never a complete and fixed thing, but rather one that is continually being adapted to the changing needs of the community for whom it is designed. Until quite recent years town plans were always made as inflexible patterns, but history has shown that a plan of this description inevitably breaks down in time.

(4) The flexible plan, preceded by a survey, is one of the most revolutionary ideas that man has ever had about the control of his environment.

(5) Most towns today have a characteristic functional pattern as follows: a central core containing the principal shopping centre, business zones, surrounded by suburbs of houses. Most town planners accept the traditional town pattern. In the preparation of a master plan they are preoccupied with the definition of the town centre, industrial areas, and the areas of housing; the creation of open space for recreation, the laying down of a pattern of main roads which run between the built-up areas (thus leaving them free of through traffic) and connect them to each other.

(6) The master plan thus has to define the ultimate growth of the town, but though the master plan is a diagram, and even a flexible one, it is the structure upon which all future development is to take place.

Вопросы и задания:

3. Translate the following word combinations. Compose sentences with them on the topic of the text

business zone, town pattern, population growth, development plan, road system, plan making, town planner, housing area, shopping centre, business centre, public transport, recreation area.

4. Mark which sentences define the main idea of the text. Prove your opinion

1. In the preparation of the master plan it is necessary to define the town zones. 2. All cities should have a plan. 3. Before a flexible plan is made it is necessary to find out about the existing environment. 4. The master plan also defines places for active and passive recreation.

5. What sentences are the titles of the certain paragraphs? Put them in order Add titles for the rest paragraphs

1. Features of the traditional town pattern.
2. The purpose of a master plan.
3. The purpose of a town plan.
4. What main points should be included in a survey.

6. Finish these sentences with suitable variant according to the text. Add some more information from the text to each sentence

1. The purpose of a town plan is...
 - a) to do research of the trends of population growth;
 - b) to give the greatest possible freedom to the individual;
 - c) to find out about the existing environment.
2. Before a town plan is designed, it is necessary...
 - a) to renew and extend the dwellings, reconstruct the working places;
 - b) to make a forecast of future development in the form of a map or a series of maps;
 - c) to find out about the existing environment.
3. History has shown that a plan should be flexible, because. ..
 - a) it should continually be adapted to the changing needs of the community for whom it is designed;
 - b) it defines the position of schools, shopping centres and social centres;
 - c) it suggests the routes of public transport.
4. The master plan has to define the ultimate growth of the town and...
 - a) no one can be certain when the development is to take place;
 - b) a society is an organic thing with life and movement;
 - c) therefore it is the structure upon which all future development is to take place.

5. In the preparation of a master plan the planners are preoccupied with...

- a) the idea that in our time plan-making has become an everyday activity;
- b) the definition of the town pattern and the laying down of a pattern of main roads;
- c) the necessity to determine the distance from work to home.

7. Define correct answers to the following questions . Prove your opinion

1. Why is it necessary to make a survey of the existing environment?
 - a) It is because no one is certain when the development is to take place;
 - b) It is because the new development absorbs or modifies the environment;
 - c) It is because growth is a law of life.
2. What does a survey consist in?
 - a) It consists in completing the town's communications;

- b) It consists in finding out about the environment, in research into the trends of population growth and the types of dwellings; and into atmospheric pollution as well;
- c) It consists in defining a place for recreation

8. Correct these statements if they are wrong. Using them as a plan speak briefly on the topic of the text.

Model: Most town planners suggest quite new town patterns.

No, they don't. Most town planners do not suggest quite new town patterns. As the text says, most town planners accept the traditional town pattern.

1. The purpose of a plan is to limit the active life of its population. 2. The plan is a complete and fixed thing, since the needs of the community do not change. 3. Growth is a law of life and town growth should not be controlled by any plan.

Практическое занятие №29.

Тема 29. Some Basic Problems in Construction / Основные проблемы в строительстве.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

Vocabulary

1. Research n

научное исследование

2. Not to keep pace with, v

Не отставать от

3. engineering problems, n

строительные проблемы

4. behavior n

поведение

5. Service conditions, n

Условия эксплуатации

6. to provide for v

обеспечивать

7. crack n трещина

8. shrinkage n

усадка

9. plain adj

неармированный

10. reinforced adj

армированный

11. cast-in-place монолитный

12. structural materials, n

конструкционные материалы

13. precast adj сборный

14. prestressed adj преднапряженный

15. flexibility n гибкость

16. opportunity n возможность
 17. investigation n исследование
 18. conception n понимание, понятие
 19. composite construction, n
 Составная конструкция
 20. to reduce v
 уменьшать
 21. to handle v доставлять
 22. productivity-производительность
 23. delivery n
 поставка
 24. working operations, n

Производственные операции
 25. supervision n надзор
 26. schedule n график
 27. jobsite, n
 строительная площадка
 28. employment n работа, занятость
 29. indispensable adj необходимый
 30. staff n штат, персонал
 31. to assume v брать
 32. function n функция

“Some Basic Problems in Construction”

However, civil engineering has solved many problems; problems demanding an engineering solution remain in construction.

The need for research. Without research, modern industry could not keep pace with the ever-changing demands for new materials, greater economy and faster operations. It is research that has helped in the solution of many engineering problems. Only research gives the answers to the problem of behaviour of structures under service conditions and provides detail information for design purposes.

Subjects for research in construction may include concrete cracks, the creep and shrinkage characteristics of concrete, deep foundations, methods of restressing, etc.

Site investigations are needed as a basis for the preparation of plans for a given project. They provide the information for economical design of foundations for buildings.

Soil stabilization is also of great importance for engineers.

Building materials. Of the various structural materials concrete plain or reinforced, cast-in-place, precast or prestressed is the material most favored by architects and engineers for structures to show all the technical and economic advantages. They are: flexibility in design, speed of construction, structural strength.

New methods in prestressed concrete construction offer the greatest opportunities for further investigation, new conceptions and new forms.

Composite construction. A popular and excellent form of construction is that using a prestressed concrete unit combined with an in-situ top. By this means the amount of prestressed concrete is reduced, handling problems are simplified.

This type of construction has become standard for bridges and house - building.

Productivity in construction depends upon many factors. They include important areas of construction activity, the design of structures, the schedule of deliveries and the working operations, the supervision of work, the flow of materials to job site and the skill of the workers.

The market for the services of the construction industry is widening. The increasing productivity lowers costs and provides for more employment for construction and working trades.

Specialists. Today the majority of construction firms have qualified and competent engineers on their staff if their operations are to be carried out efficiently and economically. Engineering operations are varied and extensive.

Men of all levels of training and competence may be required to perform engineering activities. The work of a draftsman, a toolmaker, a plant operator is indispensable but does not require the imagination.

Specialists take decisions and assume responsibilities for the result.

Engineers do have their problems and solve them in the most economical and safest way.

The more knowledge specialists have of different materials and of the functions to which they put structures, the better buildings will be.

Вопросы и задания:

Exercise 1 Match the following words and word combinations from two columns.

- | | |
|-------------------------|-------------------------------|
| 1. structural material | a. условия эксплуатации |
| 2. construction project | b. новые методы |
| 3. productivity | c. возможности |
| 4. new methods | d. строительный объект |
| 5. opportunities | e. экономическое преимущество |
| 6. service conditions | f. конструкционные материалы |
| 7. economic advantage | g. производительность |

Exercise 2. Translate the following sentences into English.

1. Проблемы, требующие технического решения, ещё остаются в строительстве.
2. Только научное исследование даёт ответы о поведении сооружений в условиях эксплуатации.
3. Строительные операции разнообразны и многочисленны.
4. Преднапряжённый бетон предлагает огромные возможности для дальнейшего исследования и новых форм.
5. Многие фирмы имеют компетентных специалистов для реализации смелых замыслов.
6. Специалисты принимают решения и несут ответственность за результат.
7. Производительность в строительстве зависит от многих факторов.
8. Это – проектирование сооружений, графики поставок материалов, контроль над выполнением производственных операций.
9. Темы для научного исследования могут быть усадочные трещины, методы предварительного напряжения арматуры, фундаменты глубокого заложения.

Exercise 3. Answer the following questions.

1. What is the text about?
2. Why is research so important for construction?
3. What methods of construction do you know?
4. What are the most important problems in construction?
5. Speak about structural materials.
6. What factors does the productivity of construction depend on?
7. What is the role of specialists in construction?
8. What do builders do?
9. What do they need for qualified work?
10. What municipal projects do you think are really worthy of admiration in Voronezh?

Рекомендуемая литература.**Перечень основной литературы**

1. English for building engineers : учеб. пособие / А.В. Колистратова. – Братск : ГОУ ВПО «БрГУ», 2011. – 92 с.
2. Данчевская, О.Е. English for Cross-Cultural and Professional Communication=Английский язык для межкультурного и профессионального общения : учебное пособие / О.Е. Данчевская, А.В. Малёв. - 6-е изд., стер. - Москва : Флинта, 2017. - 192 с.
3. Английский язык для архитектора и градостроителя: учебное пособие по английскому языку/ Л.А.Зарицкая; Оренбургский гос. ун-т. – Оренбург:

ОГУ, 2013. – 116 с.

Перечень дополнительной литературы:

1. Беляева И.В. Иностранный язык в сфере профессиональной коммуникации. Комплексные учебные задания [Электронный ресурс]: учебное пособие/ И.В. Беляева, Е.Ю. Нестеренко, Т.И. Сорогина— Электрон. текстовые данные.— Екатеринбург: Уральский федеральный университет, 2015.— 132 с.— Режим доступа: <http://www.iprbookshop.ru/65930.html>.— ЭБС «IPRbooks»

2. Меркулова Н.В. Английский язык в сфере управления / English for Management [Электронный ресурс]: учебное пособие/ Н.В. Меркулова— Электрон. текстовые данные.— Воронеж: Воронежский государственный архитектурно-строительный университет, ЭБС АСВ, 2016.— 124 с.— Режим доступа: <http://www.iprbookshop.ru/59141.html>.— ЭБС «IPRbooks»

3. Мусихина О.Н., Гисина О.Ф., Яськова В.Л. Английский язык для строителей. Практикум / Серия «Высшее профессиональное образование».—Ростов н/Д:Феникс, 2004.— 352 с.

Перечень ресурсов информационно-телекоммуникационной сети «Интернет», необходимых для освоения дисциплины

- <http://www.biblioclub.ru>
- <http://www.iprbookshop.ru>
- <http://www.catalog.ncstu.ru>

Практическое занятие №32.

Тема 32. Walls/ Стены.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

Define correct translation to English words. Explain their meaning

oblique	давление, упор
thrust	удерживающий
solid	саман
hollow	случайный
girder	пустой, полый

truss
partition
retaining
foregoing
cane
adobe
rubble
block in course
ashlar
thinly-bedded
random
scabbling
sawn
wrought
rod
woven wire
shear
cavity
cubicle
sawdust
plaster
wood wool
dressed

прежде упомянутый
блочная кладка
кладка из облицовочного камня
обработанный
окалывающий
пустотный
наклонный косой
прут, стержень
сплошной, твердый
распиленный
перегородка
бутовая (каменная) кладка
штукатурка
ригель, балка
тонкослоистый
сварочный
поперечная сила
ячейка
ферма, рама
древесно-волокнуистый
тростник
витая проволока
древесные опилки

14. Compose correct word combinations from both columns. Try to guess their meaning

oblique
solid
hollow
foregoing
rubble
block in course
ashlar
thinly-bedded
scabbling
reinforced
cavity
partition
sawdust
wood-wool
asbestos

wall
material
stone
thrust
hammer
brick work
concrete

15. Read the text. Find words characterizing all kinds of walls

Walls

Walls are constructed to enclose areas and to support the weight of floors, roofs, earth or water. They are classified as follows:

- a) walls to resist vertical pressures,
- b) walls to resist oblique thrusts.

The first section of heading includes all house walls, solid or hollow, supporting single floors, and couple close rafted roofs. The second section includes all walls carrying the girders of framed floors and the trusses of framed roofs. Inside walls serve as partitions or divisions for several rooms inside the dwelling. Inside walls may or may not support other parts of the structure.

An outside wall rests directly on the foundation wall forming a bearing unit for the upper floors and the roof and an enclosure for entire inner construction. Outside walls are made of wood, steel (for retaining walls), brick, stone, concrete blocks or concrete, or combination of two or three of the foregoing materials, cane and adobe.

Classification of Stone Walling.— This is classified as follows:

- 1) Rubble.
- 2) Block-in-Course.
- 3) Ashlar.

Rubble walls are those built of thinly-bedded stone, generally under 9 inches in depth, of irregular shapes as in common or random rubble, or squared as in coursed rubble.

Block-in-Course is composed of squared stones usually larger than coursed rubble, and under 12 inches in depth.

Ashlar is the stone from 12 to 18 inches deep, dressed with a scabbling hammer, or sawn to blocks of given dimensions and carefully worked to obtain fine joints.

Reinforced Brickwork.—It is brickwork which has been strengthened by the introduction of steel or wrought iron in the form of either flat or rod bars, woven wire or expanded metal. Such brickwork is capable of resisting tensile and shear stresses, in addition to compressive stress.

Cavity Walls.—This type of construction is now very common and is generally preferred to solid wall construction for many types of buildings, especially houses. A cavity wall is usually an external wall. It consists of two separate walls of brickwork, having a cavity between, and connected together by metal ties.

Partitions are walls which are used to divide buildings into rooms, corridors and cubicles. They also often act as deep trusses to support the joists of floors, purlins and ceiling joists of roofs, etc. Partitions may be classified under following: timber, clay and terra-cotta, concrete, sawdust concrete, plaster, wood-wool cement, asbestos-cement, and metal.

Tasks after reading:

16. Answer following questions to the text:

1. Explain the purpose of construction walls. 2. How are walls classified? 3. What does this division mean? 4. What are differences between inside and outside walls? 5. What is classification of stone walling?

17. Choose correct variant of terms to following definitions

1. This kind of wall is strengthened by the introduction of the certain type of metal in the form of bars, wire etc.
a) cavity b) rubble c) reinforced brickwork
2. It is built of thinly-bedded stone
a) rubble b) partition c) ashlar
3. It consists of two separate walls with a cavity in the middle
a) ashlar b) block-in-course c) cavity
4. It is composed of squared stones
a) partition b) block in course c) ashlar
5. They are used as deep trusses for supporting parts of a building
a) cavity b) partition c) rubble

18. Discuss with your group mates peculiarities of all types of walls ,positives and negatives for the certain kind of building and its parts

РАЗДЕЛ 4. . THE BASIC PROBLEMS OF A BUILDING MATERIAL'S INDUSTRY

Практическое занятие №39.

Тема 39. The Basic Problems of a Building Material's Industry / Основные проблемы производства строительных материалов.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой
Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

Vocabulary:

1.industrial construction– промышленное строительство

2.facility n – средство, удобство

3.govern, v– управлять

4.building industry– строительная промышленность

5.durability, n– долговечность

6.obtain, v– получать

7.search, v, n искать, поиск

8.accuracy, n точность

9.by enderrorметодом проб и ошибок

10.ratio, n- соотношение

11.simulate, v моделировать

12.technical - технический прогресс

13.challenge, n зд. Задача

14.as yet - пока, все еще

15.matter, n -вещество, материя

16.strength, n – сила, прочность

17.withstand (withstood, withstood), v-выдерживать,

18.property, n свойство

19.error, n ошибка

20.strain, nнатяжение, нагрузка

21.stress, n давление, напряжение

22.enable, v давать возможность (сделать что-либо)

23.reliably, adv-надежно

24.ultimately, adv-окончательно

25.huge loads –огромные грузы, нагрузки

26.grain, n зерно

27.furnace, n печь

28.powder, n –порошок

29.sinter, n шлак, сплав

30.save, v -беречь, спасать

31.spray, v –распылять

32.fine, adj -мелкий

Read text “The Basic Problems of Building Materials Industry”.

Building industry including residential, public and industrial construction holds a considerable place in the national economy and is being carried on a large scale. It is the largest industry in the country. The problems of construction have grown into major, political issues in most countries.

The evolution of techniques is conditioned by economic factors – the search for a maximum of stability and durability in building with a minimum of materials, labour, time and at low cost.

Technical progress is now impossible without high-quality building materials. Success in this field depends on the achievements of physics, chemistry, mathematics, and other sciences. Building materials that are used for structural purposes should meet several requirements. In most cases it is important that they should be hard, durable, fire-resistant, ecologically clean and easily fastened together.

Research in the creation of new synthetic materials is being constantly continued. A great economic advantage is already obtained from the use of polymer and plastic materials in a number of structural elements and different components.

Nowadays, many processes of man's activities can be mathematically described and, therefore, technical facilities are used to simulate these processes automatically. Automation makes it possible not only to free man from doing various operations but also to perform these operations with a greater speed and accuracy.

During the 20th century several entirely new class of building materials appeared. These are different kinds of plastics, synthetic rubbers, reinforced concrete and others. Most new materials were discovered by complete accident, some by trial and error. For example, technologists take some metals mixing them together in certain ratios and temperature and observing what comes out. The process of studying a material's behavior under pressure, at high and low temperature, in and out of magnetic and electric fields and other conditions can take years and decades. However, recent advances in computing and mathematical methods make it possible to simulate the properties of building materials. The simulations begin with the advance of quantum mechanics that govern the matter on the atomic and subatomic level. The work that used to take years now can be done much quicker. Thanks to the new achievements in computing technology and design, it makes complex calculations much easier. Where the simulations work, they bring a great change to materials development and research. Thanks to the new simulation technology, the 21st century will get new materials to solve various construction purposes. Building materials with universal properties are yet the challenge of the future.

The Great Galileo considered the science of materials strength as one of the basic engineering disciplines. Technologists and designers have to produce building materials capable of withstanding cosmic cold and vacuum, great strains and stresses. To be sure, there were also errors and tragedies when buildings fell in, machines broke down or bridges collapsed.

The problems of strength of materials are hidden in the mysteries of atomic and molecular structure. Another new discipline is being created. Called the mechanics of destruction it'll enable us to design machines, structures and mechanisms that function reliably. Further development of the science of strength will ultimately result in delicate bridges, light airy buildings, small but powerful machines capable of carrying huge loads.

Another achievement of our technologists is the creation of super hard materials. Powder metallurgy helps to obtain such materials. The operational principle of powder metallurgy is well known – an article of necessary size is modelled, in a mound, out of very small metal grain and put into an electro thermic furnace where the grains get sintered together.

There is another method when powder is sprayed onto metal parts. The spraying of powder on articles made of usual steel makes them highly heat –resistant and much stronger. Their reliability and length of service increase. The powder is pressurized, melted and sprayed in a thin layer on different metal parts.

Such a coating makes metal corrosion-resistant for a long period. Humanity was entering an age of high speeds, pressures and standards, which could be generated and withstood only with the help of new and universal materials.

Вопросы и задания.

Exercises 1. Use the words from the active vocabulary and put them into the gaps.

1. Cement is a fine... 2. Building materials differ in hardness, ... and fire resistance. 3. To...the universal properties of the building materials is the ... of the future. 4. Engineers have to avoid ... in design and constructions. 5. New materials ... high pressure and stress. 6. Reinforced concrete offers technical...over traditional post-and-beam constructions. 7. A great economic advantage is ... from the use of polymer and plastic materials. 8. Automation makes it possible to perform operations with a greater speed and ... 9. There is another method when powder is ... onto metal parts. 10. ... used instead of bricks in construction is the most cost-effective way to save money spent on building materials.

Exercise 2. Match the words from the columns.

- | | |
|----------------|---------------|
| 1. achievement | a) развитие |
| 2. to create | b)разрушение |
| 3. development | c) создавать |
| 4. strength | d)достижение |
| 5. destruction | j)принцип |
| 6. to simulate | e)прочность |
| 7. stress | i) разрушение |
| 8. researchh) | исследование |
| 9. collapsef) | напряжение |
| 10 principleg) | моделировать |

Exercise 3. Answer the following questions:

1. What materials are yet a challenge of the future?
2. What are the most important properties of building materials?
3. What new building materials have chemists created?
4. What helps eliminate mistakes in design and construction?
5. What new discipline is being created and why is it necessary?
6. Where are the problems of strength of materials hidden?
7. Is simulating a new way of creating materials?
8. What makes it possible to simulate the properties of building materials?

Exercise 4. Speak about the Basic Problems of building materials using expressions.

I'm going to speak about ...

The text is about ...

I'll start by saying that ...

Now just a few words about ...

One of the main problem is ...

We shouldn't forget that ...

In conclusion I'd like to say that ...

The problem of the text is of the great importance ...

To sum it up ...

Рекомендуемая литература.

Перечень основной литературы

1. English for building engineers : учеб. пособие / А.В. Колистратова. – Братск : ГОУ ВПО «БрГУ», 2011. – 92 с.
2. Данчевская, О.Е. English for Cross-Cultural and Professional Communication=Английский язык для межкультурного и профессионального общения : учебное пособие / О.Е. Данчевская, А.В. Малёв. - 6-е изд., стер. - Москва : Флинта, 2017. - 192 с.
3. Английский язык для архитектора и градостроителя: учебное пособие поанглийскому языку/ Л.А.Зарицкая; Оренбургский гос. ун-т. – Оренбург:ОГУ, 2013. – 116 с.

Перечень дополнительной литературы:

1. Беляева И.В. Иностранный язык в сфере профессиональной коммуникации. Комплексные учебные задания [Электронный ресурс]: учебное пособие/ И.В. Беляева, Е.Ю. Нестеренко, Т.И. Сорогина— Электрон. текстовые данные.— Екатеринбург: Уральский федеральный университет, 2015.— 132 с.— Режим доступа: <http://www.iprbookshop.ru/65930.html>.— ЭБС «IPRbooks»

2. Меркулова Н.В. Английский язык в сфере управления / English for Management [Электронный ресурс]: учебное пособие/ Н.В. Меркулова— Электрон. текстовые данные.— Воронеж: Воронежский государственный архитектурно-строительный университет, ЭБС АСВ, 2016.— 124 с.— Режим доступа: <http://www.iprbookshop.ru/59141.html>.— ЭБС «IPRbooks»

3. Мусихина О.Н., Гисина О.Ф., Яськова В.Л. Английский язык для строителей. Практикум / Серия «Высшее профессиональное образование».—Ростов н/Д:Феникс, 2004.— 352 с.

Перечень ресурсов информационно-телекоммуникационной сети «Интернет», необходимых для освоения дисциплины

- <http://www.biblioclub.ru>
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Практическое занятие №42.

Тема 42. Classification of Building Materials / Классификация строительных материалов. Concrete /Бетон, Plastics /Пластик в строительстве, Metals / Металлы, Timber / Лесоматериалы.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

Vocabulary

1. **enormous, adj** огромный
2. **output, n** выпуск
3. **cost price** себестоимость
4. **bearing, a** несущий
5. **plane, n** [плоскость]
6. **auxiliary, a** вспомогательный

7. **precast prestressed concrete** сборный предварительно напряженный бетон
8. **permeability** проницаемость
9. **liquid, n** жидкость
10. **evaluate, v** оценивать
11. **ability, n** способность
12. **impact, n** удар
13. **involve, v** включать
14. **penetration, n** проникание
15. **as yet** пока, всёеще
16. **challenge, n** . задача

Text “Classification of Building Materials”.

1. Great possibilities are open to our architects and builders by using modern building materials, achievements in science and technology in building. The importance of the building industry in our national economy is enormous as its output governs both the rate and the quality of construction work. The main current tasks are to speed up the development of the building materials industry and to decrease steadily the cost price of manufacture and the special capital investments.
2. As to the application all building materials are divided into three groups: a) main building materials such as rocks and artificial stones, timber and metals, which are used for bearing structures. b) Binding materials such as lime, gypsum and cements, which are used for jointing different planes. c) Secondary or auxiliary materials, which are used for interior parts of the buildings, such as tiling, synthetic linoleum, coatings and other facing materials.
3. If the materials do not require any technological changes in their chemical structure they are called natural building materials. These are: stone, clay, sand, lime, timber. Many of these materials have been known from time immemorial. Thus, the ancient Pyramids were constructed of stone. Stones are strong, durable, weatherproof and some of them are so attractive that the walls constructed of them don't need any special finish. Cement, concrete, reinforced concrete, plastics and others are examples of artificial building materials. The great discoveries of our time in physics, chemistry, and other sciences make it possible to create new building materials.
4. The properties of building materials are generally classified as physical, chemical and mechanical. Physical properties of materials include their characteristics relating to weight and density, their permeability to liquids, gases, heat and their resistance to aggressive environmental conditions. Chemical properties of materials are essentially evaluated by their resistance to acids, alkalis and salt solutions. The ability of materials to resist compression, tension, impact, penetration by a foreign body and other actions involving force, are generally known as mechanical properties.
5. Along with traditional building materials new ones have been created such as reinforced concrete, lightweight concrete, precast and prestressed concrete, etc. The newest building materials created nowadays comprise film products, alloys, plastics, glues and others.
6. As to their qualities, building materials should be durable, strong, water resistant, acid-resistant, heat resistant, etc. Some of them should also have a pleasant appearance. Materials with universal properties are as yet a challenge the future.

Вопросы и задания.

Exercise 1. Find the English equivalents for the following word combinations in the text.

Огромные возможности, текущая задача, специальные капиталовложения, искусственный камень, вспомогательные материалы, различные плоскости, универсальные свойства, внутренние части, химическая структура, технологические изменения, облицовочные материалы, синтетический линолеум, приятный внешний вид,

устойчивость к кислотным воздействиям, сопротивляться удару, инородное тело, легковесный бетон, сплавы, предварительно.

Exercise 2. Scan the text and write the number of the paragraph that deals with the following topics.

- a) the application of building materials
- b) the properties of building materials
- c) the importance of building materials industry
- d) the qualities of building materials
- e) the traditional and the newest building materials
- f) natural and artificial building materials

Рекомендуемая литература.

Перечень основной литературы

1. English for building engineers : учеб. пособие / А.В. Колистратова. – Братск : ГОУ ВПО «БрГУ», 2011. – 92 с.
2. Данчевская, О.Е. English for Cross-Cultural and Professional Communication=Английский язык для межкультурного и профессионального общения : учебное пособие / О.Е. Данчевская, А.В. Малёв. - 6-е изд., стер. - Москва : Флинта, 2017. - 192 с.
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Перечень дополнительной литературы:

1. Беляева И.В. Иностранный язык в сфере профессиональной коммуникации. Комплексные учебные задания [Электронный ресурс]: учебное пособие/ И.В. Беляева, Е.Ю. Нестеренко, Т.И. Сорогина— Электрон. текстовые данные.— Екатеринбург: Уральский федеральный университет, 2015.— 132 с.— Режим доступа: <http://www.iprbookshop.ru/65930.html>.— ЭБС «IPRbooks»
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Практическое занятие №55.

Тема 55. Russian Architecture / Русская архитектура.

Цель: Формирование коммуникативных компетенций, овладение лексикой и грамматикой

Знать:

- основные способы работы над языковым и речевым материалом;
- лексико-грамматический минимум в объеме, необходимом для работы с иноязычными текстами в процессе профессиональной деятельности;
- лексику профессиональной направленности;
- нормы употребления лексики английского языка в профессиональной сфере

Уметь:

- осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке;
- читать и переводить специальную литературу для пополнения профессиональных знаний;
- изъясняться на бытовые и профессиональные темы; выступать публично (с предварительной подготовкой) с сообщениями и докладами;
- аннотировать, реферировать, переводить литературу по специальности на иностранном языке

Актуальность темы: обусловлена необходимостью овладением УК-4

Теоретическая часть:

Bell tower	колокольня
carpenter	плотник
porch	крыльцо
log-cabin	изба
slender	тонкий, стройный
lavish	
щедрый	splendour
блеск, великолепие	
graceful	изящный
majestic	величественный
visible	видимый
skill	искусство, мастерство
gift	дарование, талант
embroideries	украшение
band	зд. пояс, полоса

Russian borrowed its early architecture, like its icon painting, from Byzantium.

From the eleventh to the thirteenth centuries early towns were built on defensive sites on high river banks. From afar were visible low white walls with towers, churches with brilliant domes and bell towers. The finest examples of traditional architecture can be seen in the towns of Yaroslavl, Kostroma, Suzdal, Bogolyubovo and Sergiev Posad.

In Russia, timber has always been the most natural building material. Russian carpenters decorate the diverse structures they were building with beautiful carved decorations above windows and porches. One can see such decorations on log-cabins, fortress towers, huge cathedrals, churches and monasteries.

Wooden and masonry architecture developed side by side in medieval Russia, one stimulating and gratifying the love for verticality and slenderness, the other satisfying a yearning for massiveness, monumentality, and lavish decoration in the expression of power and splendour. The few remaining examples of the ancient wooden structures are now in Rostov and also in the museums of wooden buildings in Novgorod, Kostroma and Suzdal. These examples show the skill and gift of their builders to harmonize the building proper with the landscape.

The most majestic and famous examples of wooden church architecture may be found on the island of Kizhi in Lake Onega. Here you will be impressed by the grand and gracefully silhouetted multi-domed Cathedral of the Transfiguration and ten-domed Church of the Intercession with its bell tower.

Wooden architecture predominates in Northern Russia and in some of the older settlements and towns of the Siberia, such as Tyumen.

One of the best-known Russian churches in the northern style is the Church of the Intercession on the Nerl (Pokrova na Nerli). Today it stands alone in the midst of green meadows, the small lake below reflecting its white walls and single dome.

This church is one of the most poetic creations of early Russian architecture which ever come down to us out of the past. The church is not large, and very simple in plan, with the cubical basic structure usual for the north. It is light and graceful, the structure as a whole seems hardly to touch the ground. Each facade is made up of three sections divided vertically by slender columns, and horizontally connected by a decorative band of blind arcading of the same white stone as the wall itself. As for the roofing, it was vaulted, so that each of the vertical wall sections ends in a blind arch, with long, narrow windows and small sculptured figures high up in the arch.

The builders of the most of Vladimir and Suzdal churches used cut stones instead of brick, typical for Byzantine and Kievan churches. Also they used stone embroideries, uncommon in Byzantium. They adopted the general features of the square plan, with three altar apses and the four columns supporting a flat cupola with its circular drum.

Вопросы и задания:

Exercise 1 Find the false sentences using the information from the text. Correct the false sentences:

- 1) Early Russian architecture was derived from the Byzantine architecture.
- 2) Early Russian towns were built on defensive sites.
- 3) In Russia, stone has always been the most natural building material.
- 4) Russian churches and cathedrals were rich decorated with carved decorations.
- 5) Masonry architecture was not developed in medieval Russia.
- 6) Wooden architecture predominates in Southern Russia.
- 7) The builders of the most Vladimir Churches used cut stones instead of brick.

Exercise 2 Fill in the gaps with the words given below:

- 1) Low white walls with towers, churches with brilliant... and ... were visible....
- 2) Russian ... were decorated with carved decorations.
- 3) There are some remaining examples of ancient ... architecture in Rostov.
- 4) Vladimir and Suzdal builders widely used stone ...
- 5) The Church of the Intercession on the Nerl is one of the best-known ... of early Russian architecture.

wooden; bell towers; creation; domes; embroideries; from afar; log-cabins.

Exercise 3 Answer the following questions:

- 1) Where did Russia borrow its early architecture from?
- 2) What has always been the most natural building material in Russia?
- 3) Did wooden and masonry architecture develop side by side in medieval Russia?
- 4) What do the best examples of wooden Russian architecture show?
- 5) How is one of the most famous Russian churches in the northern style called?
- 6) Can you describe the Church of the Intercession on the Nerl?
- 7) What material did builders of Vladimir and Suzdal churches use?

Exercise 4 Find in the text and put down key words that can be used to speak about early Russian architecture

Exercise 5 Summarise your knowledge of the question under consideration.

Discuss it with your partner. Use exercise 5.3.3 as a plan

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