МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
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МЕТОДИЧЕСКИЕ УКАЗАНИЯ ПО ВЫПОЛНЕНИЮ ПРАКТИЧЕСКИХ РАБОТ ПО ДИСЦИПЛИНЕ«Иностранный язык в профессиональной сфере»

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(для очной формы обучения)

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

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СОДЕРЖАНИЕ

ВВЕДЕНИЕ

Методические указания предназначены для студентов 2 курса бакалавров очной 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 сфере профессиональной коммуникации» 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 сфере профессиональной коммуникации» является формирование у студентов компетенций ОК-3 и ПК-11 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. FIELDSOFCIVILANDINDUSTRIALENGINEERING/ОБЛАСТИ ГРАЖДАНСКОГО И ПРОМЫШЛЕННОГО СТРОИТЕЛЬСТВА

Практическое занятие №1.

Тема 1. From the History of Building/ История строительства.

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:

dwell (dwelt)	жить, обитать, находиться, пребывать
cave	пещера
mud	грязь, слякоть; ил, тина
wood	дерево
stone	камень
find out	узнать, разузнать, выяснить; понять
brick	кирпич
dry	сухой; сушить
ancient	древний
discover	открывать
cut	резать; рубить, валить (лес)
erect	сооружать; воздвигать, строить (о здании)
temple	храм; церковь
tomb	могила; надгробие; мавзолей
commemorate	почтить память
huge	огромный
as well as	так же как, а также
pillar	столб, колонна; опора, стойка
support	опора; поддерживать, подпирать; нести нагрузку
bridge	мост
harbour	гавань; порт; прибежище, пристанище
basic	основной
kiln	печь для обжига и сушки
fire	обжигать (керамику, кирпичи и т.п.)
remain(s)	остатки, следы прошлого; оставаться
remind	напоминать

. suggest	предлагать
. dome	купол; верх, верхушка, свод (большого здания)
. famous	известный
. disappear	исчезать
. complete(ly)	заканчивать, завершать; полный; полностью
. lose (lost, lost)	терять, потеряться
. fusion	интеграция, объединение, слияние
. rest	лежать на; опираться
. recent	недавний, последний
. evidence	доказательство, подтверждение; свидетельство
. hold together	сплачивать(ся)
. trace back	выяснять происхождение, прослеживать
. prove	доказывать; удостоверять
. borrow	заимствовать
. sample	образец, образчик, экземпляр
. throughout	повсюду; на всем протяжении

From the history of building

Many thousands of years ago, there were no houses such as people live in today. In hot countries, people sometimes made their homes in the trees and used leaves to protect themselves from rain or sun. In colder countries, they dwelt in caves. Later people left their caves and trees and began to build houses out of different materials such as mud, wood or stones.

Later people found out that bricks made of mud and dried in the hot sunshine became almost as hard as stones. In Ancient Egypt especially, people learned to use these sun-dried mud bricks. Some of their buildings are still standing after several thousands of years. The Ancient Egyptians discovered how to cut stone for building purposes. They erected temples, palaces and huge tombs. The greatest tomb is the stone pyramid of Khufu, king of Egypt. The ancient Egyptians often erected their huge constructions to commemorate their kings or pharaohs.

The ancient Greeks also understood the art of building with cut stone, and their buildings were beautiful as well as useful. They often used pillars partly for supporting the roofs and partly for decoration. Parts of these ancient buildings can still be seen today in Greece.

The Romans were great bridge, harbour and road builders. In road, work the Romans widely used timber piles. They also erected aqueducts, reservoirs, water tanks, etc. Some of their constructions are still used till now. It is known that the manufacture of lime is one of the oldest industries used by man. Lime is a basic building material used all over the world as today so in the ancient world. One of the Romans, Marcus Porcius Cato, gave an idea of a kiln for lime production: its shape and dimensions. Such kilns were fired with wood or coal and were extremely inefficient. There are still many remains of kilns in some places of Great Britain as well as roads and the famous Hadrian Wall, which was erected to protect Romans from the celtic tribes in the first century A.D. Britain was a province of the Roman Empire for about four centuries. There are many things today in Britain to remind the people of the Roman: towns, roads, wells and the words.

In a period of 800 to 900 years the Romans developed concrete to the positionof the main structural material in the empire. It is surprising, therefore, that after the fall of the Empire, much of the great knowledge should have disappeared so completely. The knowledge of how to make durable concrete has been lost for centuries, but mention was made of it in the writings of architects from time to time.Fusion of Roman and North European traditions in construction was reflected in many ways. Buildings combined the Roman arch and the steep peaked roof of Northern Europe. Roman traditions were continued in the architectural form known as Romanesque. London Bridge, finished in 1209, took thirty-three years to build. It consisted of

nineteen irregular pointed arches with its piers resting on broad foundation, which was designed to withstand the Thames current.

The Roman period was followed by other periods each of which produced its own type of architecture and building materials. During the last hundred years many new methods of building have been discovered. One of the recent discoveries is the usefulness of steel as a building material.

Nowadays when it is necessary to have a very tall building, the frame of it is first built in steel and then the building is completed in concrete. Concrete is an artificial kind of stone, much cheaper than brick or natural stone and much stronger than they are. The Egyptians employed it in the construction of bridges, roads and town walls. There are evidences than ancient Greeks also used concrete for the building purposes. The use of concrete by the ancient Romans can be traced back as far as 500 B.C. They were the first to use it throughout the ancient Roman Empire on a pretty large scale and many structures made of concrete remain till nowadays thus proving the long life of buildings made of concrete. Of course, it was not the concrete people use today. It consisted of mud, clay and pure lime, which were used to hold together the roughly broken stone in foundations and walls. It was so-called "pseudo-concrete". The idea of such building material might have been borrowed from the ancient Greeks as some samples of it were found in the ruins of Pompeii.

Вопросы и задания:

Exercise 1. Прочитайте, переведите следующие предложения и отметьте, какие из них относятся к египетскому, греческому и римскому искусствам строительства в древности.

1. They first used sun-dried mud bricks for building.
2. In a period of 800-900 they developed concrete to the position of main structural material.
3. Their buildings were beautiful as well as useful.
4. They learned how to cut stone for building purposes.
5. They often used pillars partly for supporting the roofs and partly for decoration.
6. They used concrete for construction of bridges roads and town walls.
7. First kilns for lime production appeared in this country.
8. In ancient times concrete for building purposes was first used in this country.
9. They erected their huge constructions to commemorate their kings.
10. They were great bridge and road builders in old times.

Exercise 2. Закончите следующие предложения в соответствии с текстом. Предложения переведите на русский язык.

1. Many thousands of years ago there were no houses …
2. In hot countries people made their homes …
3. In colder countries they …
4. In ancient time kilns for lime production were fired by …
5. The knowledge of how to make durable concrete … for centuries.
6. After the Fall of the Roman Empire Roman traditions were continued …
7. Buildings combined the Roman arch and …
8. During the last hundred years many methods of building….
9. One of the most recent discoveries is …
10. Nowadays the frame of a tall building is first … and then …

Exercise 3. Закончите следующие предложения, используя английские эквиваленты из текста в соответствии с текстом. Предложения переведите на русский язык.

1. Concrete is an artificial kind of stone, намногодешевлеипрочнее, than brick or natural stone.
2. The Egyptians used concrete для строительства мостов, дорог и городских стен.
3. Существуютдоказательства that ancient Greeks also used concrete inbuilding purposes.

4. The use of concrete by the ancient Romans можетбытьпрослеженеще в 500 году до нашей эры).
5. They were the first to use it throughout the ancient Roman Empire вдовольноширокихмасштабах.
6. Concrete in old times consisted of mud, глины, чистойизвестиигрубого(неровного) щебня.
7. London Bridge finished in 1209 was designed on broad foundation (чтобы противостоять течению Темзы**.**

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.— Екатеринбур: 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.F., 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

Практическоезанятие №2.

Тема 2. From the history of building.TowerofBabel.

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.

Теоретическаячасть:

1. carry out a plan – выполнитьплан
2. get more loads – взятьбольшегруза
3. heaven ['hevn] – n небо, небеса
4. invade [in'veid] – v вторгаться, захватывать; ~er n захватчик; посягатель
5. lay the bricks – кластькирпичи
6. mortar ['mo:tə] – n раствор
7. pile up – нагромождать, зд. возводить, строить
8. ruin [ruin] – v разрушить
9. split (up) – v разделить (на группы и т. п.), расколоть; поссорить
10. stairway ['stɛəwei] = staircase['stɛəkeis] – n лестница
11. tobelacking – быть недостаточным
12. to keep – хранить, содержать
13. heaven – небеса
14. angel – ангел
15. to order – приказать
16. to pile up – возводить
17. the east side – восточная сторона
18. stairway – лестница
19. the west – запад
20. load – груз
21. invader – захватчик, интервент
22. to cooperate – сотрудничать
23. to split – разделять
24. a tongue – язык
25. understandable – понятный
26. to lay – класть
27. a mess – беспорядок
28. to blame – обвинять
29. to be ruined – быть разрушенным

Tower of Babel. "How the Ancient Builders Put a Hand to the Development of Different Languages"

1. The people of Babylonia were rich and powerful. They were also happy. They loved each other and *they enjoyed working together[1]. *But one thing was lacking[2]. Men had only the earth to enjoy. God had kept heaven for himself and his angels.

2. The King of Babylonia decided that his people should have Heaven as well as Earth. So he ordered them to build a great tall tower. Six hundred thousand men began making bricks and mixing mortar and piling up a building higher and higher. All day every day men carried bricks and mortar up a stairway on the east side of the tower. Then they walked down another stairway on the west to get more loads. This went on for forty-two years until the Tower was twenty-seven miles high. It was so high that it took a man a whole year to carry bricks from the ground to the top.

3. Now the Tower had risen nearly to Heaven, and God saw that he would have to do something to keep the invaders out. Perhaps if he made it hard for people to co-operate, they would not be able to finish the Tower. To carry out his plan God sent seventy angels down to Earth. The angels had orders: first to take away the one language everybody understood, then to split the people up into groups, with each group speaking a new tongue of its own.
4. *In no time[3] the men who made bricks couldn't talk to the men who carried them. And the men who carried bricks couldn't say an understandable word to the men who laid the bricks. Everything was a mess, and everybody blamed everybody else for not understanding. People no longer talked about the Tower of Heaven. Nobody worked there any longer. And the Tower was soon ruined.

Notes to the text:
1. …they enjoyed working together. – …имнравилосьработатьвместе.
2. But one thing was lacking. – нонехваталоодного.
3. In no time… – вмгновениеока
4. General Understanding. Answer the questions to the text:
1. What language did the ancient Babylonians speak?
2. What were they lacking?
3. What did the king of Babylonia decide to do?
4. Was God glad to see the building of the tower to the Heaven?
5. How many angels were sent down to Earth?
6. What orders did they have?
7. Were they successful?
8. The Tower was ruined, wasn't it?

Вопросыизадания:

Exercise 1.*Answer to the following test*

1. In ancient Babylonia only one thing was lacking
a) men had only the earth to enjoy
b) God had kept heaven for everyone
c) the king of Babylonia was rich and powerful
2. The king of Babylonia decided _____, so he ordered _____.
a) to build a great tall tower, to keep heaven
b) to enjoy working together, to make bricks
c) to have heaven for his people, to build a tower
3. _____ men began making bricks and mixing mortar
a)60 000 b) 6 000 c) 600 000
4. Men carried bricks and mortar up a stairway _____ and walked down _____ of the tower.
a) west side, north side
b) east side, west side
c) east side, south side
5. The building went on for _____ until the Tower was _____.
a) 52 years, 207 miles high
b) 32 years, 20 miles high
c) 42 years, 27 miles high
6. When the Tower _____, God decided _____
a) was ruined, to reconstruct it
b) had risen nearly to heaven, to keep the invaders out
c) was being built, to cooperate with people
7. God sent _____ and gave order _____
a) 70 angels down to Earth, to take away common language
b) 17 orders, to create a new tongue
c) 7 tongues, to split the people up into groups

8. No one man could _____ and everybody _____ for not understanding.
a) carry bricks, made mortar
b) work there any longer, laid the bricks
c) say an understandable word, blamed everybody
Exercise 2. ***Write down the composition "History of Building". Pay attention to the differences of using building materials in different periods and invention of new methods and constructive forms. Add some more information and facts to your composition.***

Практическоезанятие №3.
Тема 3. "EngineeringandItsPresentStatus" / 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 - иметьделос
8. to lay the foundation, v - закладыватьфундамент
9. to enable v - давать возможность
10. executionn - выполнение
11. engineeringtechniques, n - техническиесредства
12. factualapproach, n - фактическийподход
13. strikinglyadv - удивительно
14. bulkofengineering, n- объёминженерногоискусства
15. toallowv - предоставлять
16. off-the-shelf approach, n - стандартныйподход
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. tailoredadj - приспособленный
25. selectiveadj–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 civi 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 thiscontinuing 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.

Вопросыизадания:

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 andenergy are made (useless, useful) for man in structures and products.
2. The basis of engineering is (knowledge, skill) of the materials used, theirproperties and mathematics.
3. Civil engineering deals with (destruction, construction) of various projects.
4. Engineering (works, tasks) have been built for the use and convenience ofman.
5. Engineering is a (temporary, constantly) changing and developingprofession.
6. There are (more, less) opportunities today for civil engineering inconstruction than before.
7. Engineering works mark the (increasing, decreasing) mastery of man overnature.
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 ofnatural 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 thanbefore.
2. The basis of engineering is knowledge of materials used and mathematics.
3. Civil engineering never dealt with planning, design or construction ofvarious 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 conditionsand 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 thedevelopment 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.— Екатеринбур: 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.F., 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 №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:

VOCABULARYTOUSE

appliance —приспособление, прибор
apply —- обращаться *(for —за помощью, справкой и т.д, to— к кому-л*)
branch — ветвь; филиал; отрасль
concern (with)—касаться, относиться; интересовать
conflictwithnature — 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
toenrich – обогатить, разнообразить
remarkable – замечательный, отличный
steam – engine – паровой двигатель
growth– рост, увеличение
space – космос
tocomprise – 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 18 th 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 latter[2], military engineering, concerned itselfwith 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 20lh 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 engineering[3]:

1.*Housing, industrial and agricultural construction.*

2.Structural engineering comprises the construction of all fixedstructures 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 — вболееширокомсмысле

2.Theformer..., whilethelatter... — первый (имеется в виду из двух упомянутых)..., тогда как последний... (издвух упомянутых)

3.Here are some fields of civil engineering. — Вотнекоторыеобластистроительства.

Вопросыизадания:

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

military — **non**-military — militari**sation**; enumerate — enumeration;
decide — deci**sion** — decision-**maker**; invent — inventor—invention;
apply — appli**ance** — appli**cation**; explain — explana**tory** — explana**tion**;
build — build**er** — build**ing** —**re**built; achieve—achieve**ment**;
construct — construct**or**—construct**ion** — construct**ive**—**re**construct

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 constructers, 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 constructers, 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.

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.— Екатеринбур: 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.F., Яськова В.Л. Английский язык для строителей. Практикум / Серия«Высшее профессиональное образование».—Ростов н/Д:Феникс, 2004. — 352 с.

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Практическоезанятие №5.

Тема5. Geotechnical engineering. Transportationengineering / Инженернаягеология. Транспортное проектирование.

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

Теоретическаячасть:

Geotechnical engineering

The main subject of the field of geotechnical engineering is concerned with foundations, soil properties, soil mechanics, compression and swelling of soils, seepage, slopes, embankments, retaining walls, ground and rock anchors, use of synthetic tensile materials in soil structures, soil structure interaction, and soil dynamics.

Transportation engineering

Transportation engineering is concerned with moving people and goods efficiently, safely, and in a manner conducive to a_vibrant community. This involves specifying, designing, constructing, and maintaining transportation infrastructure which includes streets, highways, rail systems, airports, ports, and mass transit. Itincludes areas such as transportation design, transportation planning, traffic engineering, urban engineering, queuing theory, pavement engineering, Intelligent Transportation System (ITS), and infrastructure management.

I. Find English equivalents in the text:

механика грунта-

земляной вал -
сжатие и набухание грунта -
подпорная стена-
анкерные крепления -
растяжимый (эластичный) материал -
динамические воздействия на грунт -
свойства грунта -
фильтрационный расход -
откос -
большой населенный пункт -
общественный транспорт -
транспортное конструирование -
проектирование движения -
проектирование городского движения -
теория массового обслуживания -
проектирование тротуаров -
интеллектуальная транспортная система -
управление объектами капитального строительства -

II. Give Russian equivalents to the following:

foundation -
to be concerned with -
use -
synthetic -
interaction -
moving -
goods -
efficiently -
safely -
in a manner -
specifying -
maintaining -
highways -
include -
transportation engineering -

III. Translate the text and say whether these statements are true or false:

1. Geotechnical engineering is concerned with soil structure interaction, soil dynamics and maintenance of fixed structures.
2. Soil properties is one of the main subjects which is concerned with the field of geotechnical engineering.
3. Moving people and goods efficiently is one of the main tasks of transportation engineering.
4. Transportation infrastructure includes water supply and irrigation.
5. The main subject of the field of transportation engineering is concerned with transportation design, transportation planning, traffic engineering and urban engineering.

IV. Choose the right variant:

1. The main subject of the field of geotechnical engineering is concerned with foundations.

а) Основным предметом для изучения инженерной геологии являются фундаменты.

б) Главным объектом исследования в области инженерной геологии являются фундаменты.

в) Изучение области инженерной геологии связано главным образом с фундаментами.

V. Transportation engineering is concerned with moving people and goods efficiently.

а) Транспортное проектирование - это передвижение людей и товаров эффективно.

б) Транспортное проектирование связано с эффективным перемещением людей и товаров.
в) Транспортное проектирование связано с перемещением людьми товаров эффективно.

VI. This involves specifying, designing, constructing and maintaining transportation infrastructure.

а) Это включает спецификацию, дизайн, конструкцию и поддержку транспортной инфраструктуры.
б) Это включает в себя подробное описание, проектирование, строительство и обслуживание транспортной инфраструктуры.
в) В это входит подробное описание, дизайн, конструирование и поддержание транспортной инфраструктуры.

6. **Continue the sentence:**

2. The main subject of geotechnical engineering is concerned with ...
a) foundations, soil properties and railway systems.
b) compression and swelling of soils, soil structure interaction and soil dynamics.
c) foundations, retaining walls and girders.
3. Transportation engineering is concerned with moving .
a) goods efficiently.
b) people and goods in time.
c) People and goods efficiently and safely.
4. Moving people and goods involves ...
a) constructing and maintaining transportation infrastructure.
b) planning, constructing and maintaining of fixed structures.
c) Designing, constructing and maintaining transportation infrastructure.

VII. Transportation infrastructure includes .
7. roads, railways, power plants and traffic.
8. streets, railways, bridges, water supply and airports.
9. streets, rail systems, airports, ports and mass transit.

VII. a) Complete the table:

Noun	Verb	Adjective
-	-	compressed
-	Move	-
specification	-	-
-	-	transported
management	-	-
-	Design	-
-	-	constructed

5. **Choose the word from the table to complete the sentence:**

d) Geotechnical engineering deals with soil properties, . and swelling of soils and many other things.
e) The main task of transportation engineering is . people and goods efficiently.
f) Streets, highways, rail systems and ports are a part of ... infrastructure.
g) To move people and goods efficiently one should ., design, . and maintain transportation infrastructure.
h) Transportation engineering includes transportation ., transportation planning, traffic engineering, infrastructure . and things like that.

VIII. Scan the text and answer the questions:

d) Is geotechnical engineering concerned with maintaining transportation infrastructure?
e) What kinds of soil properties concern geotechnical engineering?
f) What is transportation engineering concerned with?
g) What does moving people and goods involve?
h) What does transportation infrastructure include?
i) Does transportation infrastructure deal with traffic, urban and pavement engineering?

Практическое занятие №6.

Тема 6. Environmentalengineering/ Инженерное обеспечение охраны окружающей среды

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:

Environmentalengineering/ Инженерное обеспечение охраны окружающей среды

Wastewater treatment is a critical activity in environmental engineering, a sub-discipline of civil engineering.

Environmental engineering deals with the treatment of chemical, biological, and/or thermal waste, the purification of water and air, and the remediation of contaminated sites, due to prior waste disposal or accidental contamination. Among the topics covered by environmental engineering are pollutant transport, water purification, sewage treatment, and hazardous waste management. Environmental engineers canbe involved with pollution reduction, green engineering, and industrial ecology. Environmental engineering also deals with the gathering of information on the environmental consequences of proposed actions and the assessment of effects of proposed actions for the purpose of assisting society and policy makers in the decision making process.

Environmental engineering is the contemporary term for sanitary engineering. Some other terms in use are public health engineering and environmental health engineering.

VIII. Find English equivalents in the text:

обработка сточных вод -
термические отходы -
очистка воздуха -
восстановление загрязненных мест -
загрязняющий транспорт -
обработка нечистот -
обработка опасных отходов -
снижение степени загрязнения -
озеленение -
оценка(оценивание) -
последствия от предложенных действий -

содействие -
политические деятели -
коммунальные службы -
здоровье общества -
санитарное состояние окружающей среды -

IX. Give Russian equivalents to the following:

subdiscipline -
due to -
disposal -
to cover -
to be involved -
industrial ecology -
to gather -
consequence -
decision -
contemporary -
other terms -

X. Translate the text and say whether these statements are true or false:

10. Environmental engineering is a subdiscipline of civil engineering.
11. Environmental engineering deals with wastewater treatment.
12. Sewage treatment and hazardous waste management are among topics covered by environmental engineering.
13. Environmental engineers can be involved with contamination.
14. Gathering of information on the environmental consequences of proposed actions is the only task of environmental engineering.
15. Sanitary engineering is the contemporary term for environmental engineering.

XI. Choose the right variant:

6. Wastewater treatment is a critical activity in environmental engineering.

а) Расход воды - это критическая деятельность инженерного обеспечения охраны окружающей среды.
б) Обработка сточных вод - это крайне важная работа в инженерном обеспечении охраны окружающей среды.
в) Обработка сточных вод - это критическая работа по инженерному обеспечению охраны окружающей среды.

XII. Environmental engineering deals with the treatment ...

а) Инженерное обеспечение охраны окружающей среды занимается обработкой .
б) Инженерное обеспечение охраны окружающей среды имеет дело с оздоровлением .
в) Инженерное обеспечение охраны окружающей среды занимается применением .

XIII. Environmental engineers can be involved with .

а) Специалисты по охране окружающей среды могут быть увлечены .
б) Специалисты по охране окружающей среды могут заниматься .
в) Специалисты по охране окружающей среды могут быть вовлечены .

XIV. Environmental engineering is the contemporary term for sanitary engineering.

а) Инженерное обеспечение охраны окружающей среды - это современный термин для санитарной инженерии.
б) Инженерное обеспечение охраны окружающей среды - это современное название коммунальных служб.
в) Инженерное обеспечение охраны окружающей среды - это временное название коммунальных служб.

16. **Continue the sentence:**
7. Environmental engineering is a subdiscipline of ...

i) geotechnical engineering.

j) sanitary engineering.
k) civil engineering.
8. Environmental engineering deals with .
j) environmental contamination.
k) the treatment of wastes and the remediation of contaminated sites.
l) seepage, slopes and embankments.
9. Pollutant transport is a topic for ...
d) transportation engineering.
e) geotechnical engineering.
f) environmental engineering.

XV. Environmental engineering can be involved with .

17. construction and maintenance of transportation infrastructure.
18. pollution reduction and industrial ecology.
19. urban engineering, transportation planning and infrastructure management.

XVI. For the purpose of assisting society and policy makers in the decision making process environmental engineering deals with .

10. the assessment of effects of contamination.
11. the Intelligent Transportation System.
12. the environmental consequences of proposed actions and the assessment of effects of these actions.

VII. a) Complete the table:

Noun	Verb	Adjective
critic		
		purified
	Remediate	
contamination		
	Pollute	
		reduced
proposal		
		decisive
	Assess	

l) **Choose the word from the table to complete the sentence:**

m) Environmental engineering concerns the purification of water and air and the . of contaminated sites.
n) Environmental engineers deal with . reduction.
o) Wastewater treatment is a . activity in environmental engineering.
p) Environmental engineering covers also pollutant transport, water ., sewage treatment and things like that.
q) Due to prior waste disposal or accidental contamination, ... sites should be remediated.
r) Environmental engineering involves gathering of information on the environmental consequences of ... actions.
s) Environmental engineering must also gather information on the environmental consequences of proposed actions and . of effects of proposed actions.

XVII. For the purpose of assisting society and policy makers in the ... making process environmental engineering is to gather information on the environmental consequences of proposed actions.

VIII. Scan the text and answer the questions:

20. What is the relation between environmental engineering and civil engineering?
21. Is wastewater treatment a very important activity in environmental engineering?
22. What does environmental engineering deal with?
23. How do many sites become contaminated?
24. What topics are covered by environmental engineering?
25. What can environmental engineers be involved with?
26. What kind of information does environmental engineering deal with?
27. What is the purpose of gathering of such kind of information?

Практическое занятие №7.

Тема 7. Constructionengineering/ Строительная промышленность

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.

Теоретическаячасть:

Construction engineering

Construction engineering concerns the planning and management of the construction of structures such as highways, bridges, airports, railroads, buildings, dams, and reservoirs. Construction of such projects requires knowledge of engineering and management principles and business procedures, economics, and human behavior. Construction engineers engage in the design of structures temporary, cost estimating, planning and scheduling, materials procurement, selection of equipment, and cost control.

Construction Engineering is differentiated from Construction Management from the standpoint of the use of math, science, and engineering to analyze problems and design a construction process. Construction engineers build many ofthe things that people use everyday. Construction engineering involves many aspects of construction including: commercial, residential, bridges, airports, tunnels, and dams. It is an extremely large industry that provides jobs to many and continues to grow. Currently there are nearly 6 million people working on construction in the United States

Construction engineers are in high demand so it is easy for a CE to get a job in any part of the country.

XVIII. Find the following words and word combinations in the text:

касается планирования -
знание инженерных принципов -
методы деловой деятельности -
калькуляция стоимости -
закупка материалов -
контроль за расходами -
планировать процесс строительства -
коммерческие объекты -
жилые объекты -

обеспечивать работой -
пользоваться большим спросом -
получить работу -
планирование и составление калькуляции графиков по проекту -

XIX. Give Russian equivalents of the following:

construction of dams and reservoirs -
to require knowledge -
management principles -
human behavior -
standpoint -
use of math -
to analyze problems -
to involve many aspects -
an extremely large industry -
selection of equipment -

XX. Translate the text and say whether these statements are true or false:

28. Construction of highways, bridges, airports, railroads, buildings, dams and reservoirs requires knowledge of parts of a building.
29. Construction engineering concerns the planning and management of the construction of structures.
30. The design of structures is only a part of the activities construction engineers engage in.
31. Construction Engineering is almost the same as Construction Management from the standpoint of the use of math.
32. Construction engineering involves only residential building.
33. There are a lot of unemployed people in construction industry in the USA.
34. They don't need any construction engineers in the USA.

XXI. Choose the right variant:

13. Construction engineering concerns the planning and management of the construction of structures ...

а) Строительная промышленность контролирует планирование и руководство строительства конструкций .
б) Строительная промышленность планирует руководство строительства сооружений .
в) Строительная промышленность занимается планированием и руководством строительства сооружений .

XXII. Construction engineers engage in the design of structures .

а) Инженеры-строители вовлечены в дизайн конструкций ...
б) Инженеры-строители увлечены планированием и сооружениями .
в) Инженеры-строители занимаются проектированием сооружений .

XXIII. It is an extremely large industry that provides jobs ...

а) Это очень большая индустрия по найму на работу ...
б) Это чрезвычайно, что большая промышленность проводит работу .
в) Это чрезвычайно большая промышленность, которая обеспечивает работой .

XXIV. Construction engineers are in high demand so it is easy .

а) Инженеры-строители очень требовательны, так как легко .
б) Инженеры-строители предъявляют высокие требования, поэтому легко .
в) Инженеры-строители пользуются большим спросом, поэтому это легко .

35. **Continue the sentence:**
14. The planning and management of the construction of structures is the main task of .
m) construction process.
n) Construction Engineering.
o) Construction Management.
15. Construction engineers engage in .

t) making laws.
u) selling and buying goods.
v) cost estimating, materials procurement, selection of equipment, etc.
16. Construction engineers build many of the things ...
g) that are out of use today.
h) that people don't need.
that people use everyday.
XXV. Construction engineers .
36. aren't in great demand in the USA.
37. are wanted all over the USA.
38. are out of demand in the USA.

VII. a) Complete the table:

Noun	Verb	Adiective
-	-	constructed
requirement	-	-
-	Design	-
growth	-	-
-	-	building
-	Manage	-
-	-	selected

17. **Choose the word from the table to complete the sentence:**

p) Construction of bridges, airports, railroads, buildings and things like that ... knowledge of engineering and management principles.
q) Construction engineering concerns the planning and . of the construction of structures.
r) Construction engineering involves many aspects of .
s) Construction engineering is an extremely large industry and continues .
t) Construction engineers . a lot of things that people use everyday.
u) Construction engineers engage in the design of structures, planning and scheduling, ... of equipment, cost control and so on.
v) Construction engineers engage in the ... of structures.

VIII. Scan the text and answer the questions:

w) Construction of what structures concerns the planning and management in construction engineering?
x) What knowledge does construction of highways, bridges, airports, buildings and things like that require?
y) What do construction engineers deal with?
z) Does Construction Engineering differ from Construction Management?
Why are construction engineers very popular among people?
XXVI. What aspects of construction does construction engineering involve?
XXVII. Is construction engineering a large industry?
XXVIII. Do many people work on construction in the USA?
XXIX. Are there many unemployed among construction engineers in the USA?

Практическоезанятие №8.

Тема8. ConstructionindustryintheUnitedStates / СтроительнаяиндустриявСША.

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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.

Теоретическаячасть:

Construction industry in the United States.

Construction is the largest industry in the United States. It provides jobs to millions ranging in all types of education. Construction engineers follow the plans of architects and sometimes design the actual structure. After the structure has been designed the engineers make sure it has been built correctly by testing and overseeing the construction.

Tasks - Construction engineers have a lot of responsibilities in their job. Certain tasks have to be completed everyday in order to get the job done correctly. Analyzing reports is a main part of their job description. They must analyze maps, drawings, blueprints, aerial photography and other topographical information. Construction engineers also have to use computer software to design hydraulic systems and structures while following construction codes. They have to calculate load and grade requirements, liquid flow rates and material stress points to ensure that the structure can withstand stress. Keeping a safe workplace is key to having a successful construction company. It is the construction engineer's job to make sure that everything is conducted correctly. In addition to safety, the construction engineer has to make sure that the site stays clean and sanitary. Surveying the land before construction begins is also a job of the construction engineer. They have to make sure that there are no impediments in the way of where the structure will be built and if there are any they must move them. They also must estimate costs and keep the project under budget. Construction engineers have to test the soils and materials used for adequate strength. Finally, construction engineers have to provide construction information, including repairs and cost changes, to the managers.

XXX. Find the following words and word combinations in the text:

обеспечивать работой -
проектировать полноразмерное сооружение -
конкретные задания -
описание работы -
аэрофотосъемка -
делать эскизы гидросистем -
строительные нормы -
требования по нагрузке и маркировке -
расход жидкости -
точка натяжения материала -
обследование участка -
в пределах бюджета -
проверять на достаточную прочность -
ремонтные работы -

обеспечивать строительство объекта -

XXXI. Give Russian equivalents of the following:

to follow the plans -
to oversee the construction -
a main part -
to analyze blueprints -
topographical information -
computer software -
to withstand stress -
a safe workplace -
to conduct correctly -
clean and sanitary -
an impediment -
in the way -
cost changes -
to test the soils -

XXXII.Translate the text and say whether these statements are true or false:

39. Construction engineering provides jobs to millions having higher education only.
40. After the structure has been designed the engineers make sure it has been built correctly by testing the soils.
41. The main task of construction engineers concerns analyzing.
42. Construction engineers never use computer software in their work.

XXXIII. It is the construction engineer's job to make the site clean and sanitary.

XXXIV. Construction engineers have to survey the land before construction begins.

XXXV. The soils and materials used have to be tested for adequate strength by the managers.

XXXVI. The managers are to be provided with construction information, including repairs and cost changes.

43. **Choose the right variant:**

18. . engineers make sure it has been built correctly .

а) . инженеров уверяют в том, что все было построено правильно .
б) . инженеры удостоверяются в том, что оно было построено правильно .
в) . инженеры уверены, что оно было построено правильно .

19. Construction engineers have a lot of responsibilities in their job.

а) Инженеры-строители имеют много обязательств в своей работе.
б) Инженеры-строители должны отвечать за свою работу.
в) Инженеры-строители очень ответственны в своей работе.

20. They have to calculate load and grade requirements ...

а) Они должны вычислять нагрузку и сортировать требования ...
б) Они должны рассчитывать требования по нагрузке и маркировке ...
в) Им приходится производить калькуляцию нагрузки по требованиям маркировки .

21. ... construction engineer's job is to make sure that everything ...

а) . работа инженера-строителя состоит в том, чтобы уверять, что все ...
б) . работа инженера-строителя делает уверенным, что все .
в) . работа инженера-строителя состоит в том, чтобы убедиться, что все .

22. Surveying the land before construction begins ...

а) Обследовав участок, строительство начинается .
б) Обследование участка до строительства начинается .
в) Обследование участка до того, как строительство начнется ..

XXXVII. Construction engineers have to test the soils and materials used for adequate strength.

а) Инженеры-строители имеют пробы почв и материалов, которые используются для достаточной прочности.

б) Инженеры-строители должны тестировать почвы и применяемые материалы на достаточную прочность.
в) Инженеры-строители должны тестировать почвы и материалы, применяемые для достаточной прочности.

XXXVIII. They also must estimate costs and keep the project under budget.

а) Они также должны оценивать стоимость содержания проекта в пределах бюджета.
б) Они также должны оценивать стоимость и обеспечивать строительство объекта вне бюджета.
в) Они также должны составлять смету расходов и обеспечивать строительство объекта в пределах бюджета.

44. **Continue the sentence:**

23. Construction industry provides jobs to .
w) millions having higher education only.
x) millions of people having no education at all.
y) millions having different types of education.
24. Construction engineers follow the plans of architects and ...
aa) sometimes make the site clean and sanitary.
bb) oversee the construction.
cc) decide what the size of the walls must be.
25. The main part of construction engineers' job description is ...
i) making aerial photography.
j) analyzing reports.
k) using computer software.
26. To have a successful construction company means ...
a) to follow construction codes.
b) to calculate load and grade requirements correctly.
c) to keep a safe workplace.
27. Construction engineers also must estimate costs ...
a) to keep a safe workplace.
b) to keep the site clean and sanitary.
to keep the project under budget.

VII. a) Complete the table:

Noun	Verb	Adjective
_	_	built
_	Response	_
description	_	_
_	Calculate	_
_	_	required
_	Move	_
provision	_	_
_	Ensure	_

XXXIX. Choose the word from the table to complete the sentence:

45. Construction engineers have to make sure that there are no impediments in the way of where the structure will be ... .
46. Construction engineers have to . construction information to the managers.
47. They have to calculate load and grade . .
48. Construction engineers have a lot of ... in their job.
49. Certain ... have to be completed to ensure that everything is conducted correctly.
50. They have to make all the calculations to . that the structure can withstand stress.
51. If there are any impediments in the way of where the structure will be built they must ... them.
52. Analyzing reports is a main part of their job ... .

VIII. Scan the text and answer the questions:

28. Whom does construction industry provide jobs to?

29. Construction engineers follow the plans of architects, don't they?
30. How do construction engineers make sure the structure has been built correctly?
31. What is a main part of construction engineers' job description?
32. What do construction engineers have to use computer software for?
33. When do construction engineers have to conduct surveying the land?
34. What must construction engineers do with impediments that happen to be in the way of where the structure will be built?
35. Why do construction engineers have to test the soils and materials used?
What do construction engineers have to provide to the managers?

Практическое занятие №9.

Тема 9. Industrialconstruction /Промышленное строительство

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.

Теоретическаячасть:

Industrial construction

Industrial construction, though a relatively small part of the entire construction industry, is a very important component. Owners of these projects are usually large, for-profit, industrial corporations. These corporations can be found in such industries as medicine, petroleum, chemical, power generation, manufacturing, etc. Processes in these industries require highly specialized expertise in planning, design, and construction. As in building and heavy/ highway construction, this type of construction requires a team of individuals to ensure a successful project.

Design team

In the modern industrialized world, construction usually involves the translation of paper or computer based designs into reality. A formal design team may be assembled to plan the physical proceedings, and to integrate those proceedings with the other parts. The design usually consists of drawings and specifications, usually prepared by a design team including architects, interior designers, civil engineers, cost engineers (or quantity surveyors), mechanical engineers, electrical engineers, and structural engineers. The design team is most commonly employed by (i.e. in contract with) the property owner. Under this system, once the design is completed by the design team, a number of construction companies or construction management companies may then be asked to make a bid for the work, either based directly on the design, or on the basis of

drawings and a bill of quantities provided by a surveyor. Following evaluation of bids, the owner will typically award a contract to the lowest responsible bidder.

XL. Find English equivalents in the text:

промышленное строительство -
относительно малая часть -
электроснабжение, энергетика -
коллектив собственников -
проектная группа -
претворение в жизнь -
чертежи и проектные задания -
специалист по дизайну интерьеров -
инженер-сметчик -
сметный расчет -
заключить подрядный договор -
выгодный подрядчик -
инженер-проектировщик -
гражданский инженер-строитель -
заказчик-застройщик -
определение количества заявок -
компьютерный проект -
специальные знания -
современный индустриальный мир -
коммерческая корпорация -
заявка на работу -

XLI. Give Russian equivalents to the following:

petroleum -
to manufacture -
to involve -
paper based -
to assemble -
a physical proceeding -
to integrate -
commonly -
to employ -
a construction company -
to base -
a quantity surveyor -
to provide -
typically -
a bidder -

XLII. Translate the text and say whether these statements are true or false:

53. Industrial construction is a large part of the entire construction industry.
54. Large, for-profit, industrial corporations own industrial construction projects.
55. Processes in medicine, petroleum, chemical, manufacturing and other industries require common expertise in planning and construction.
56. Industrial construction requires a team of civil engineers to ensure a successful project.
57. Construction usually involves the translation of computer based designs into paper.
58. The physical proceedings are planned by a formal team of individuals.
59. A design team usually prepares a successful project.
60. A design team usually consists of individuals and owners.
61. The design team is usually in contact with the property owner.
62. After the design is completed construction companies can make a bid for the work.

63. The owner usually awards a contract to the most famous bidder.

XLIII. Choose the right variant:

36. As in building and heavy\highway construction, this type of construction .

а) Как и в жилищном строительстве и строительстве крупных инженерных сооружений или дорожном строительстве этот тип строительства .

б) Так как в жилищном строительстве и в строительстве крупных инженерных сооружений или дорожном строительстве этот тип строительства .

в) И в жилищном строительстве и в строительстве крупных инженерных сооружений в этом типе строительства .

37. ... construction usually involves the translation of paper or computer based design into reality.

а) ... строительство обычно вовлекает перевод реальных проектов, выполненных на бумаге в компьютерные.

б) ... строительство обычно предполагает претворение в жизнь как бумажных, так и выполненных на компьютере проектов.

в) . строительство обычно предполагает перевод реальных проектов как на бумагу, так и в компьютерный вариант.

XLIV. ... once the design is completed by the design team ...

а) . однажды, когда проект завершен проектной группой .

б) . так как проект завершается проектная группа .

в) . когда проектная группа завершает проект .

XLV. Following evaluation of bids, the owner will typically award a contract .

а) Следуя оценке тендеров, собственник обычно заключает договор ...

б) Вследствие оценки заявок, собственник обычно заключает договор ...

в) После оценки заявок, собственник обычно заключает подрядный договор .

64. **Continue the sentence:**

38. Owners of industrial construction projects are usually ...

z) . large construction companies.

aa) . large construction management companies.

bb) ... large industrial corporations.

39. Industrial construction requires a team of individuals .

dd) . to translate paper or computer based designs into reality.

ee) ... to integrate physical proceedings with the other parts.

ff) ... to ensure a successful project.

40. A formal design team may be assembled ...

l) . to award a contract to the lowest responsible bidder.

m) ... to ensure a successful project.

n) ... to prepare drawings and specifications.

41. After the design is completed a number of construction companies or construction management companies may be asked .

d) . to plan the physical proceedings.

e) ... to ensure a successful project.

. to make a bid for the work.

XLVI. After evaluation of bids the owner usually awards a contract .

65. . to the construction company.

66. . to the large, for-profit industrial corporation.

67. . to the lowest responsible bidder.

VII. a) Complete the table:

Noun	Verb	Adjective
-	succeed	-
form	-	-
-	-	proceeded

-	prepare	-
provision	-	-
-	-	based
-	respond	-

42. **Choose the word from the table to complete the sentence:**

cc) A ... design team usually prepares drawings and specifications.

dd) The design usually consists of drawings and specifications, usually ... by a design team.

ee) Industrial construction requires a team of individuals to ensure ... project.

ff) A formal design team may be assembled to plan the physical . .

gg) Construction usually involves the translation of paper or computer . designs into reality.

hh) A surveyor is a person who usually . a bill of quantities.

ii) The owner usually awards a contract to the lowest . bidder.

VIII. Scan the text and answer the questions:

gg) Industrial construction is a relatively small part of the entire construction, isn't it?

hh) Who are the owners of industrial construction projects?

ii) Where can these corporations be found?

jj) What kind of expertise do processes in these industries require?

kk) What does industrial construction require a team of individuals for?

ll) What does construction usually involve in the modern industrialized world?

mm) What may a formal design team be assembled for?

nn) Who usually prepares drawings and specifications?

oo) Whom does a design team include?

pp) Who commonly employs the design team?

qq) When may a number of construction companies or construction management companies be asked to make a bid for a work?

rr) Who provides a bill of quantities?

ss) Whom does the owner typically award a contract to?

Практическое занятие №10.

Тема 10. Buildingconstruction /Строительство зданий.

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.

Теоретическаячасть:

Building construction

Building construction is the process of adding structure to real property. The vast majority of building construction projects are small renovations, such as addition of a room, or renovation of a bathroom. Often, the owner of the property acts as laborer, paymaster, and design team for the entire project. However, all building construction projects include some elements in common - design, financial, and legal considerations. Many projects of varying sizes reach undesirable end results, such as structural collapse, cost overruns; those with experience in the field make detailed plans and maintain careful oversight during the project to ensure a positive outcome.

For projects of large size and/or unusual type, the owner will likelyestablish a team of workers and advisors to create an overall plan. This ensures that the project will proceed in an orderly way to a desirable end. While no set list would establish what is needed or advisable for a particular project, frequently used advisors include mortgage bankers, accountants, lawyers, insurance brokers, architects, and engineers. While their roles overlap, each area of expertise addresses an element of what will be affected by the building construction project.

XLVII. Find English equivalents in the text:

жилищное строительство -
объект недвижимости -
реконструкция ванной комнаты -
подсобный рабочий -
заказчик -
весь объект (строительства) -
правовые особенности -
обрушение сооружения -
перерасход финансовых средств -
четкий контроль -
разрабатывать генеральный план -
организованно (организованным порядком) -
определенный список -
страховой агент (брокер) -
ипотечный банкир (банковский работник) -
совпадать -
специальные знания -

XLVIII. Give Russian equivalents to the following:

a vast majority -
the owner of the property -
design team -
a varying size -
an undesirable end result -
detailed plans -
to maintain -
to ensure a positive outcome -
to establish a team of workers -
a particular project -
an accountant -
frequently -

XLIX. Translate the text and say whether these statements are true or false:

68. Building construction concerns adding structure to real property.
69. A small renovation often includes addition of a room, renovation of a bathroom and things like that.

70. The construction engineer usually acts as laborer, paymaster, and design team for the entire project.
71. Many projects of varying sizes reach desirable end results.
72. Those with experience in the field make it possible to ensure a positive outcome.
73. For projects of large size the owner creates an overall plan himself.
74. A group of advisors establish a set list of what is needed for a particular project.

L. Choose the right variant:

43. Many projects of varying sizes reach desirable end results ...

а) Многие проекты различных размеров достигают нежелательного результата .

б) Многие объекты различных размеров приводят к нежелательным конечным результатам .

в) Многие объекты больших размеров достигают результатов, которые являются нежелательными .

LI. This ensures that the project will proceed .

а) Это обеспечивает сохранность проекту и будет продолжать ...

б) Это гарантирует проекту продолжение .

в) Это гарантирует, что проект будет продвигаться .

LII. While no set list would establish what is needed ...

а) Так как установленный перечень всего необходимого не утвержден .

б) Пока установленный список всего того, что необходимо не будет утвержден .

в) Так как ни один список необходимых вещей не установлен ...

LIII. ... frequently used advisors include mortgage bankers, accountants, ...

а) . зачастую пользовались консультантами, включая ипотечных банкиров, бухгалтеров, .

б) . часто использованные консультанты включают ипотечных банковских работников, бухгалтеров, .

в) . в число часто используемых консультантов входят ипотечные банковские работники, бухгалтера, .

LIV. ... each area of expertise addresses an element of what will be affected .

а) ... каждая область специальных знаний направлена на элемент, который будет оказывать влияние на .

б) . каждая сфера знаний адресуется отдельному элементу, который подвержен влиянию .

в) . каждая область специальных знаний и опыта связана с отдельным элементом, на который будет оказывать влияние .

75. **Continue the sentence:**

44. The owner of the property often acts as ...

jj) a construction engineer.
kk) a manager.
ll) a laborer.

45. This ensures that the project will proceed in an orderly way to .

tt) an undesirable end result.
uu) a desirable end.
vv) a negative outcome.

LV. All building construction projects include ...

76. small renovations.
77. financial and legal considerations.
78. cost overruns.

LVI. A team of workers and advisors is established to deal with ...

46. addition of a room.
47. projects of large size and unusual type.
48. renovation of a bathroom.

LVII. Mortgage bankers, accountants, lawyers, insurance brokers, architects and engineers make up .

mm) a team of workers for a particular project.

nn) a team of design workers for a particular projects.

oo) a team of frequently used advisors for a particular projects.

VII. Complete the table:

Noun	Verb	Adiective
-	major	-
-	-	renovated
-	finance	-
desire	-	-
-	detail	-
-	-	addressed
advice	-	-

ww) **Choose the word from the table to complete the sentence:**

o) All building construction projects include design, ... and legal considerations.

p) The vast . of building construction projects are small renovations.

q) A team of workers and advisors create an overall plan to ensure that the project will proceed in an orderly way to a . end.

r) Those with experience in the field make . plans and maintain careful oversight during the project.

s) A set list of what is needed or ... for a particular project should be established.

t) Each area of expertise ... an element of what will be affected by the building construction project.

u) A building construction project sometimes includes addition of a room or ... of a bathroom.

VIII. Scan the text and answer the questions:

LVIII. What does building construction deal with?

LIX. What does a small renovation usually include?

LX. How does the owner of the property usually act?

LXI. What do all building construction projects include?

LXII. What do many projects of varying sizes sometimes reach?

LXIII. Why should careful oversight be maintained during the project?

LXIV. What will the owner likely establish a team of workers and advisors for?

LXV. What ensures that the project will proceed in an orderly way to a desirable end?

LXVI. Whom do frequently used advisors include?

LXVII. Do their roles overlap?

LXVIII. What does each area of expertise address?

Практическое занятие №11.

Тема 11. Residentialconstruction /Жилищное строительство

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.

Теоретическаячасть:

Residential construction

More and more families are looking into building their own homes, or contracting to have them built. Construction practices, technologies, and resources conform to state and local building codes. In most Australian states, a home owners warranty must be obtained prior to residential construction of dwellings less than three stories high.

Heavy/Highway construction

Heavy/Highway construction is the process of adding infrastructure to our built environment. Owners of these projects are usually government agencies, either at the national or local level. As in building construction, heavy/highway construction has design, financial, and legal considerations, however these projects are not usually undertaken for-profit, but to service the public interest. However, heavy/highway construction projects are also undertaken by large private corporations, including, among others, the golf courses, harbors, power companies, railroads, and mines, who undertake the construction of access roads, dams, railroads, general site grading, and massive earthwork projects. As in building construction, the owner will assemble a team to create an overall plan to ensure that the goals of the project are met.

LXIX. Find English equivalents in the text:

жилищное строительство -
практика строительства -
строительные нормы -
строительство жилых домов -
строительство крупных инженерных сооружений -
дорожное строительство -
застроенная окружающая среда -
поле (площадка) для гольфа -
энергетическая компания -
подъездная дорога -
организация рельефа -
крупный земляной объект - собирать команду -

LXX. Give Russian equivalents to the following:

to conform -
home owners warranty -
to obtain -
to add infrastructure -
a harbor -
a government agency -
a local level -
profit -
a public interest -
a mine -
to undertake the construction -
to create an overall plan -

LXXI. Translate the text and say whether these statements are true or false:

79. More and more families want to build their own homes.

80. A home owners warranty must be obtained to construct a dwelling less than three stories high.
81. Heavy construction is the process of adding a structure to real property.
82. Only private agencies usually own the projects concerning the process of adding infrastructure to our built environment.
83. Heavy/highway construction projects are undertaken for profit.
84. Heavy construction projects concerning golf courses, harbors, power companies, rail roads are undertaken by government agencies.
85. An overall plan is created to ensure that the goals of the projects are met.

LXXII. Choose the right variant:

49. More and more families are looking into building their own homes ...
а) Большие семьи наблюдают за строительством своих домов ...
б) Больше и больше семей ищут построенные дома для жилья ...
в) Все больше и больше семей хотят построить свои собственные дома .

LXXIII. . a home owners warranty must be obtained .
а) ... поручительство владельцев дома должно быть получено ...
б) . владельцы домов гарантируют, что должно быть получено .
в) . гарантия для владельцев домов должна быть получена .

LXXIV. ... the process of adding infrastructure to our built environment ...
а) ... процесс, добавленный к инфраструктуре нашей застроенной окружающей среды .
б) ... процесс добавления инфраструктуры к нашей застроенной окружающей среде .
в) . процесс, который добавляется к инфраструктуре нашей застроенной окружающей среды .

LXXV. ... to ensure that the goals of the project are met.
а) . гарантировать, что цели проекта будут соответствовать друг другу.
б) . гарантировать соответствие целей проекта.
в) ... гарантировать, что цели проекта будут достигнуты.

LXXVI. ... are also undertaken by large private corporations, including, among others, the golf courses, .
а) . также предпринимаются большими частными корпорациями, включая, среди других, площадки для гольфа, .
б) . также принимаются большими частными компаниями, включая и другие, такие как площадки для гольфа, .
в) . также предпринятый большими частными корпорациями, в состав которых, среди других, входят площадки для гольфа .

VI. Continue the sentence:

86. A home owners warranty must be obtained .
50. ... before residential construction of dwellings.
51. ... due to residential construction of dwellings.
52. ... after residential construction of dwellings starts.
87. A lot of families nowadays are looking into .
pp) ... building their own flats.
qq) ... contracting to have their own golf courses.
rr) . contracting to have their own homes built.
88. Heavy construction is the process of adding ...
xx) . structures to real property.
yy) ... a room or renovation of a bathroom.
zz) ... golf courses, harbors, power companies and things like that to our built environment.

LXXVII. Heavy/highway construction projects are undertaken .
89. . for profit.
90. ... to service the public interest.
91. ... to service the government interest.

LXXVIII. The owners ... to ensure that the goals of the project are met.

53. ... himself creates an overall plan ...

54. . assembles a team to create an overall plan .

55. . undertakes all measures .

VII. a) Complete the table:

Noun	Verb	Adjective
-	build	-
-	-	contractual
-	reside	-
finance	-	-
-	-	interesting
-	environ	-
creation	-	-
-	-	assembled

ss) **Choose the word from the table to complete the sentence:**

aaa) Heavy/highway construction deals with adding infrastructure to our built . .

bbb) Heavy/highway construction has design, ., and legal considerations.

ccc) Many families nowadays are . building their own homes.

ddd) A home owners warranty must be obtained prior to ... construction of dwellings.

eee) Heavy/highway construction projects are undertaken to service the public .

fff) A team of advisors ... an overall plan to ensure that the goals of the project are met.

ggg) Construction practices, technologies, and resources conform to state and local . codes.

hhh) The owner ofthe project will ... a team to create an overall plan.

VIII. Scan the text and answer the questions:

v) What are more and more families looking into?

w) When must a home owners warranty be obtained?

x) What does heavy/highway construction deal with?

y) Who is the owner of heavy/highway construction projects?

z) Are heavy/highway construction projects undertaken for profit?

aa) What do heavy/highway construction projects include?

bb) What does the owner of the project assemble a team of advisors for?

What do a team of advisors create an overall plan for?

РАЗДЕЛ. EDUCATIONANDCAREER OF CONSTRUCTION ENGINEER / ОБРАЗОВАНИЕИКАРЬЕРАИНЖЕНЕРА-СТРОИТЕЛЯ.

Практическоезанятие №12.

Тема 11. New projects: the architect-engineer-contractor team / Новыйпроект: Командаархитектор-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
2.to interrelate v -взаимодействовать
3.triple -тройной
4.trianglen -треугольник
5. objective, n = aim, n -цель
6. in spite of, prep –несмотряна
7. to accept v -принимать
8. particular adj -частный
9. discerning adj -проницательный
10.toexistv -существовать
11.mutualrespect, n -взаимоуважение
12. outstanding success, n – выдающийсяуспех
13. to coordinate v -координировать
14. to achieve, v -достигать
15. magnitude n -важность
16 tocultivatev - культивировать, поощрять
17. finaldecision, n - окончательноерешение
18. estimate n - смета
19. structural engineer, n - инженер-проектировщик
20. to be aware of, v - знать, сознавать
21. owner, n - 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.

Вопросыизадания.

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; планироватьрасположениенаплощадке.

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.
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.— Екатеринбур: 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.F., 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 №13

Тема 13. Constructionengineers/ Инженеры-строители

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.

Теоретическаячасть:

Construction engineers

Construction engineers build structures that are used by people everyday so they have to be safe and be able to withstand the elements. To complete the job properly construction engineers have to have the knowledge of many different aspects. Those aspects include engineering, technology, design, math, construction, English, customer service, management, transportation, public safety, and computers. They use the engineering, technology, and math aspects to make sure they build the structure to the set standards. They use English, customer service, and management knowledge to deal with the people that could possibly buy the structure. They also use this knowledge to inform the management on how the project is coming along and if any changes are needed.

Most construction engineers have a love for math and science. In addition to these abilities there are many other skills needed to be a construction engineer. Critical thinking, listening, learning, problem solving, monitoring, and decision making are all very important in construction engineering. Construction engineers have to be able to think about all aspects of a problem and listen to other's ideas so that they can learn everything about a project before it begins. After they have begun a project they must solve the problems that they encounter using math and science. They also have to monitor the workers on the job site for safety and to make sure that the project is on time and done correctly. Whenever a problem occurs it is up to the construction engineer to make the decision on how to fix it.

LXXIX. Find the following words and word combinations in the text:

выдерживать элементы конструкции -
инженерное искусство -
обслуживание клиентов -
безопасность населения -
установленные нормы -
навыки управления -
идти, продвигаться -
критическое мышление -
решение проблем -
принятие решений -
проблемы, с которыми они сталкиваются -
следить за рабочими -
рабочее место -
зависит от инженера-строителя -

LXXX. Give Russian equivalents of the following:

to be safe -
to complete the job -
different aspects -
to inform management -
to buy the structure -

a love for math and science -
many other skills -
all aspects of a problem -
to learn everything about the problem -
whenever a problem occurs -
how to fix it -

LXXXI. Translate the text and say whether these statements are true or false:

92. Structures that are used by people everyday have to be safe.
93. To complete the job properly construction engineers have to have the knowledge of engineering and management only.
94. They use customer service and management knowledge to make sure they build the structure to the set standards.
95. To be a construction engineer you must have a love for literature.
96. Construction engineers don't have to know anything about a project before it begins.
97. They have to use math and science after a project have been started.
98. The workers have to monitorthe construction process on the j ob site.
99. The construction engineers have to make the decision on how to fix any problem.

LXXXII. Choose the right variant:

100. Construction engineers build structures that are used by people .

а) Инженеры-строители возводят сооружения, чтобы люди могли использовать их .
б) Инженеры-строители строят сооружения, которые люди используют .
в) Инженеры-конструкторы строят конструкции, это используемые людьми .

101. To complete the job properly construction engineers have to have the knowledge of many different aspects.

а) Для полного и правильного выполнения работы инженеры- строители должны иметь знания многих различных аспектов.
б) Чтобы выполнить работу правильно, инженеры-строители должны иметь знания множества различных аспектов.
в) Для правильного выполнения работы инженеры-строители должны ознакомиться с различными аспектами.

102. They use the engineering, ., to make sure they build the structure to the set standards.

а) Они пользуются инженерным искусством, ..., и уверяют, что они строят в соответствии с установленными стандартами.
б) Они используют инженерное искусство, ., чтобы убедить, что они строят в соответствии с установленными стандартами.
в) Они используют навыки инженерного искусства, ., чтобы убедиться, что они строят сооружение в соответствии с установленными нормами.

103. . there are many other skills needed to be a construction engineer.

а) . есть много других навыков необходимых для инженеров- строителей.
б) . есть множество других навыков, которые необходимы для того, чтобы инженерами-строителями.
в) ... есть еще много различных навыков, в которых нуждаются инженеры-строители.

104. ... listen to other's ideas so that they can learn everything ...

а) . слушать другие идеи так, чтобы они могли научить всему ...
б) .слушать мысли других потому, что они могут научить всему .
в) . слушать идеи других, для того чтобы узнать все .

LXXXIII. Whenever a problem occurs it is up to the construction engineer ...

а) Когда проблема случается, инженер-строитель ...
б) Когда бы ни случалась проблема, она зависит от инженера- строителя ...
в) Когда бы ни случилась проблема, только инженер-строитель .

105. **Continue the sentence:**

56. Construction engineers use math aspects ...

tt) to withstand the elements.

uu) to complete the job properly.
vv) to build the structure to the set standards.
57. Critical thinking, listening, learning, problem solving are needed .
iii) to use a computer properly.
jjj) to be a construction engineer.
kkk) to monitor the workers on the job site.
58. Construction engineers can learn everything about a project before it begins ...
cc) using English and management knowledge.
dd) thinking about all aspects of a problem and listening to other's ideas.
ee) solving the problems that they encounter.
59. Construction engineers have to have the knowledge of many different aspects .
f) to inform the management on how the project is coming along.
g) to deal with the people that could possibly buy the structure.
h) to complete the job properly.

VII. a) Complete the table:

Noun	Verb	Adiective
-	save	-
-	-	informed
make	-	-
-	-	used
-	manage	-
building	-	-
-	-	monitored

LXXXIV. Choose the word from the table to complete the sentence:

106. Construction engineers use math aspects to make sure they ... the structure to the set standards.
107. Structures that are used by people everyday have to be ... and be able to withstand the elements.
108. They use management knowledge . the management on how the project is coming along.
109. Construction engineers have to have the knowledge of engineering, technology, design, ., public safety and things like that to complete the job properly.
110. Construction engineers have to ... sure that the project is on time and done correctly.
111. They also have to . the workers on the job site for safety.
112. To complete the job properly construction engineers ... the knowledge of many different aspects.

VIII. Scan the text and answer the questions:

60. Why do structures that construction engineers build have to be safe?
61. What do construction engineers have to have the knowledge of many different aspects for?
62. What knowledge do construction engineers have to have to make sure they build the structure to the set standards?
63. What knowledge do they use to deal with the people that could possibly buy the structure?
64. Who informs the management on how the project is coming along?
65. How do construction engineers can learn everything about a project before it begins?
66. What must construction engineers solve after they have begun a project?
67. Why do construction engineers have to monitor the workers on the job site?
68. Does the management or a construction engineer make the decision on how to fix any problem whenever it occurs?

Практическое занятие №14.

Тема 14. Constructionengineers(2) /Инженеры-строители (2).

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.

Теоретическаячасть:

Construction engineers
Construction engineers have many different kinds of abilities they use to do their job. Construction engineers use these abilities to communicate with other workers and to solve problems. They also haveto use their abilities to know what kinds of materials to order and how to get those materials while staying under the budget.
Construction engineers have many activities that they have to do everyday. Those activities include drafting, decision making, computer interaction, communication, documenting, creative thinking, organizing, information collecting, estimating, and analyzing. Construction engineers use drafting to design structures and to show others how to build them. They have to analyze information and make the best decision and solve problems. Computers are an important tool used by construction engineers. They use them to write programs and solve equations. Communication is used everyday to interact with coworkers and supervisors. They have to communicate in person, by telephone, and through e-mail. Documentation is used to record important information that needs to be passed on to management. Most documenting is done in electronic form. Creative thinking is used to come up with new ideas and solve problems. Construction engineers have to be organized to accomplish goals and prioritize jobs. They have to gather information on the task at hand before they can start a project. This will help ensure that the job is completed correctly. In order to keep a project under budget, construction engineers have to estimate costs of materials and workers. Finally, they have to analyze data to find answers to problems they are having on the job site.

LXXXV. Find English equivalents in the text:
способность -
составление плана -
принятие решения -
оформление документов -
составление сметы -
важный инструмент -
устанавливать очередность в выполнении работ -
выполнять задачи -
строительная площадка -

LXXXVI. Give Russian equivalents to the following:
to stay under the budget -
computer interaction -
creative thinking -
information collecting -
to design structures -
to interact with coworkers -
to communicate in person -

to be passed on to management -
to gather information on task -
to estimate costs of materials -

LXXXVII. Translate the text and say whether these statements are true or false:

113. Construction engineers use different kinds of abilities to communicate with each other.
114. Construction engineers have a lot to do every day.
115. The activities of the construction engineers include creative thinking and organizing parties.
116. Construction engineers don't use computers in their work.
117. Construction engineers have to communicate with coworkers by telephone only.
118. Creative thinking is used to solve problems.
119. Construction engineers have to analyze data to ask the workers questions.

LXXXVIII. Choose the right variant:

69. Construction engineers have many different kinds of abilities they use to do their job.

а) Инженеры-строители должны использовать много разных возможностей для выполнения своей работы.

б) Инженеры-строители имеют много различных возможностей для выполнения своей работы.

в) Инженеры-строители имеют много различных способностей, которые они используют для выполнения своей работы.

70. They have to communicate in person, by telephone and through e-mail.

а) Они должны связываться с людьми по телефону и по электронной почте.

б) Они имеют связь с людьми по телефону и по электронной почте.

в) Они должны связываться с людьми лично, по телефону и по электронной почте.

LXXXIX. Creative thinking is used to come up with new ideas and solve problems.

а) Креативное мышление используется в новых идеях и решении проблем.

б) Креативное мышление используется для того, чтобы соответствовать новым идеям и для решения проблем.

в) Креативное мышление использовалось в новых идеях и решении проблем.

120. **Continue the sentence:**

71. Construction engineers have many abilities ...

ww) to do every day.
xx) they use to do their job.
yy) to design structures.

72. Construction engineers use documentation .

lll) to solve problems.
mmm) to analyze information.
nnn) to record information and to pass it onto management.

73. Construction engineers use estimating ...

ff) to make the best decision and solve problems.
gg) to keep a project under budget.
hh) to show others how to build structures.

VII. a) Complete the table:

Noun	Verb	Adjective
construction	-	-
-	communicate	-
-	-	decisive
interaction	-	-
-	create	-
organization	-	-
-	-	informed

XC. Choose the word from the table to complete the sentence:

121. Construction engineers have to analyze information and make the best . and solve problems.
122. They have to gather . on the task at hand before they can start a project.
123. Communication is used every day . with coworkers and supervisors.

124. . thinking is used to come up with new ideas and solve problems.
125. Construction engineers have to be . to accomplish goals and prioritize jobs.
126. Construction engineers use many kinds of abilities ... with other workers.
127. Construction engineers use drafting to design structures and to show others how ... them.

VIII. Scan the text and answer the questions:

74. What kind of activities do construction engineers have to do every day?
75. What do construction engineers use their abilities for?
76. What do construction engineers use drafting for?
77. How do they manage to make the best decision and solve problems?
78. What do construction engineers use for writing programs and solving equations?
79. What is communication used for?
80. How do construction engineers pass important information onto management?
81. What is creative thinking used for?
82. Why do construction engineers have to be organized?
83. What do construction engineers have to do in order to keep a project under budget?

How do construction engineers find answers to problems they are having on the job site?

Практическое занятие №15.

Тема 16. EducationandLicensureofcivilengineers / Образование и лицензирование инженера-строителя.

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.

Теоретическаячасть:

Education and Licensure

Prior to becoming a practicing engineer, civil engineers generally complete tertiary (college or higher) educational requirements, followed by several years of practical experience. Each country, state, or province individually regulates civil engineering practice.

In the U.S., one must become a licensed Professional Engineer to do any civil engineering work affecting the public or to legally represent oneself as a civil engineer. Licensure requirements vary slightly by state, but in all cases entail passing two licensure exams, the Fundamentals of Engineering exam and the Principles and Practice exam, and completing a state-mandated number of years of work under the supervision of a licensed Professional Engineer. In addition, an educational requirement must often be met. All states accept a four year Bachelor of Science (BS) or Bachelor of Engineering (BEng) degree in Civil Engineering. The acceptability of degrees in

other fields varies by state; some states allow a person to substitute additional years of supervised work experience for the degree requirement. Although the American Society of Civil Engineers encourages states to raise the educational requirement to a graduate degree, advanced degrees are currently optional for civil engineers in the United States. Graduate study may lead either to a Master of Engineering, which is a Professional Master's degree, or to a Master of Science degree followed by a PhD in civil engineering or a sub-discipline.

XCI. Find the following words and word combinations in the text:

практикующий инженер -
за которыми следуют -
практический опыт -
работа, связанная с гражданским строительством -
затрагивать интересы общества -
представлять себя -
слегка отличаться -
лицензированный профессиональный инженер -
бакалавр технических наук -
ученая степень -
требование наличия ученой степени -
аспирантура -
магистр технических наук -
доктор философии в гражданском строительстве -

XCII. Give Russian equivalents of the following:

prior to becoming -
tertiary educational requirements -
licensure requirements -
a state-mandated number of years -
under the supervision -
varies by state -
work experience -
to be optional -
currently -
a requirement must be met -
the acceptability of degrees -
civil engineering practice -

XCIII. Translate the text and say whether these statements are true or false:

128. Prior to becoming a practicing engineer, civil engineers have several years of practical experience.

129. A licensed Professional Engineer in the USA can do any civil engineering work affecting the public.

130. Licensure requirements vary greatly by state and entail passing two or three licensure exams.

131. In the US, to become a licensed Professional Engineer one should complete a state-mandated number of years of work under the supervision of a licensed Professional Engineer.

132. In Civil Engineering all states accept a Bachelor of Engineering degree only.

In the USA one cannot substitute additional years of supervised work experience for the degree requirement.

XCIV. Nowadays advanced degrees are optional for civil engineers in the United States.

133. **Choose the right variant:**

84. . civil engineers generally complete tertiary educational requirements, followed by several years of practical experience.

а) . инженеры-строители обычно получают вузовское образование после нескольких лет практического опыта работы.

б) . инженеры-строители, как правило, получают вузовское образование, после чего следуют несколько лет практического опыта работы.
в) . инженеры-строители обычно получают высшее образование, которое соответствует нескольким годам практического опыта работы.
85. ... one must become a licensed Professional Engineer to do any civil engineering work affecting the public .
а) ... кто-то должен стать лицензированным профессиональным инженером, чтобы выполнять любую работу по гражданскому строительству, связанную с обществом .
б) . один должен стать лицензированным профессиональным инженером, чтобы выполнять какую-нибудь работу по гражданскому строительству, влияющую на общество .
в) . нужно стать лицензированным профессиональным инженером, чтобы выполнять любую работу по гражданскому строительству, затрагивающую интересы общества .
86. . an educational requirement must often be met.
а) . образовательное требование должно зачастую соответствовать.
б) . с образовательным требованием часто приходится встречаться.
в) . образовательное требование зачастую должно быть удовлетворено.
87. . some states allow a person to substitute additional years of supervised work experience for the degree requirement.
а) . некоторые штаты позволяют человеку заменить дополнительные годы практического опыта работы ученой степенью.
б) ... в некоторых штатах разрешается замещать требование ученой степени дополнительными годами практического опыта работы.
в) . в некоторых штатах разрешается замещение дополнительных лет практического опыта работы требованием ученой степени.

XCV. Continue the sentence:

134. To become a practicing engineer, civil engineers generally complete ...
88. secondary educational requirements.
89. higher educational requirements.
90. basic educational requirements.
135. To do any civil engineering work one must .
zz) become a licensed Professional Engineer.
aaa) get a Bachelor of Engineering degree.
bbb) complete a tertiary educational requirements.
136. Licensure requirements entail ...
ooo) passing the Fundamentals of Engineering exam and the Principles and Practice exam.
ppp) completing a state-mandated number of years of work.
qqq) passing the Fundamentals of Engineering exam and the Principles and Practice exam and completing a state-mandated number of years of work.
137. Some states allow a person to substitute ...
ii) secondary educational requirements for the degree requirement.
jj) the degree requirement for additional years of supervised work experience.
kk) additional years of supervised work experience for the degree requirement.

VII. a) Complete the table:

Noun	Verb	Adjective
-	-	practicing
-	regulate	-
-	-	licensed
education	-	-
-	-	supervised
-	-	required
addition	-	-

XCVI. Choose the word from the table to complete the sentence:

138. Licensure ... entail passing two licensure exams.
139. A licensed Professional Engineer . the work of a practicing engineer during several years of his practical experience.

140. To become a . engineer, civil engineers generally complete higher educational requirements.
141. An . requirement must often be met.
142. Some states allow a person to substitute . years of supervised work experience for the degree requirement.
143. To do any civil engineering work in the US you must become a . Professional Engineer.
144. Each country, state, or province individually . civil engineering practice.
145. All states ... a four year Bachelor of Science or Bachelor of Engineering Degree.

VIII. Scan the text and answer the questions:

91. What do civil engineers complete to become a practicing engineer?
92. Who regulates civil engineering practice?
93. Who can do any civil engineering work in the USA?
94. What do licensure requirements entail?
95. Who supervises the work of a practicing engineer during several years of his practical experience?
96. What degrees in Civil Engineering are accepted in the United States?
97. Is the situation with the acceptability of degrees in other fields the same in all states?
98. Are advanced degrees obligatory for civil engineers in the United States nowadays?
99. What degree follows after a Master of Engineering degree in the USA?

Практическое занятие №16.

Тема 16. Career/ Карьера

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.

Теоретическаячасть:

Careers

In the United States, there is no one typical career path for Civil Engineers. Most engineering graduates start with jobs of low responsibility, and as they prove their competence, are given more and more responsible tasks, but within each subfield of civil engineering, and even within different segments of the market within each branch, the details of a career path can vary. In some fields and in some firms, entry- level engineers are put to work primarily monitoring construction in the field, serving as the “eyes and ears” of more senior design engineers; while in other areas, entry-level engineers end up performing the more routine tasks of analysis or design. More senior engineers can move into doing more complex analysis or design work, or management of more complex design projects, or management of other engineers, or into specialized consulting, including forensic engineering.

Salaries for Civil Engineers in the United States have typically been lower than those for other fields of engineering, but entry-level salaries are higher than those in most non-engineering fields outside IT.

XCVII. Find the following words and word combinations in the text:

продвижение по службе -
выпускники-инженеры -
подтверждать профессиональное соответствие -
сегмент рынка -
инженеры-стажеры -
более сложные конструкторские проекты -
стандартные задачи -
руководство другими инженерами -
криминалистика -
заработная плата на начальном уровне -
более ответственные задания -

XCVIII. Give Russian equivalents of the following:

low responsibility -
subfield of civil engineering -
can vary -
to monitor construction in the field -
to serve as the “eyes and ears” -
senior design engineers -
complex analysis or design work -

XCIX. Translate the text and say whether these statements are true or false:

146. Civil Engineers in the United States have one typical career path.
147. Nowadays most engineering graduates don’t have to prove their competence to be given more responsible tasks.
148. Within each subfield of civil engineering the details of a career path are the same.
149. In all fields and in all firms entry-level engineers start their work with monitoring construction in the field.
150. Civil engineers in the United States have salaries as those in other fields of engineering.

C. Choose the right variant:

100. . as they prove their competence, are given more and more responsible tasks .

а) . так как они доказывают свою компетенцию, они дают больше и больше ответственных заданий ...

б) ... по мере того как они подтверждают свое профессиональное соответствие им дают более и более ответственные задания .

в) . так как им приходится подтверждать свою профессиональную пригодность им дают более и более ответственные задания .

101. . within each subfield of civil engineering, and even within different segments of the market ...

а) . в соответствии с каждой подобластью гражданского строительства и даже в соответствии с различными секторами рынка .

б) . с каждой подобластью гражданского строительства и даже с разными сегментами рынка .

в) . в каждой подобласти гражданского строительства и даже в различных сегментах рынка .

CI. . in some firms entry-level engineers are put to work primarily .

а) в некоторых фирмах прием на работу инженеров состоит в первую очередь .

б) . в некоторых компаниях инженеры-стажеры вынуждены работать в первую очередь .

в) . в некоторых компаниях инженеры-стажеры начинают свою работу с .

CII. . entry-level engineers end up performing the more routine tasks .

а) . инженеры-стажеры заканчивают выполнять более стандартные задания .

б) . инженеры-стажеры приступают к выполнению более стандартных заданий .

в) . инженеры-стажеры, наконец, начинают выполнять более стандартные задания.

CIII. More senior engineers can move into doing more complex .

а) Больше старших инженеров могут приступить к выполнению большего количества сложных .

б) Более старшие инженеры могут сдвинуть с места выполнение более трудных .

в) Старшие инженеры могут перейти к выполнению более сложных .

151. **Continue the sentence:**

102. Most engineering graduates start with .

ccc) more responsible tasks.

ddd) more routine tasks of analysis or design.

eee) jobs of low responsibility.

103. Salaries of civil engineers in the United States are ...

rrr) higher than those in most non-engineering fields.

sss) the same as in those of other fields of engineering.

ttt) lower than those of other fields of engineering.

104. In some firms entry-level engineers start their work with ...

ll) monitoring construction in the field.

mm) doing complex analysis and design work.

nn) management of complex design projects.

VII. a) Complete the table:

Noun	Verb	Adjective
	manage	
		responsible
	vary	
monitor		
	specialize	
-	-	performed

CIV. Choose the word from the table to complete the sentence:

152. Nowadays most engineering graduates have to prove their competence to receive more ... tasks.

153. In the United States the career path for civil engineers in different subfields of civil engineering can ...

154. At the beginning of the career path entry-level engineers have to ... construction in the field.

155. More senior engineers ... more complex design projects.

156. In some fields entry-level engineers start their work monitoring construction in the field, while in other areas they . the more routine tasks of design.

157. While entry level engineers start their work monitoring construction in the field, more senior engineers can move into management of other engineers or into ... consulting.

VIII. Scan the text and answer the questions:

105. Is there only one typical career path for civil engineers in the United States?

106. How do most engineering graduates start their career path?

107. What do entry-level engineers have to do in some engineering firms?

108. What are more senior engineers meantime busy with?

109. How can salaries for Civil Engineers be compared with those for other fields of engineering?

Практическое занятие №17.

Тема 17. Designteam/ Проектная группа.

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.

Теоретическаячасть:

Design team

The modern trend in design is toward integration of previously separated specialties, especially among large firms. In the past, architects, interior designers, engineers, developers, construction managers, and general contractors were more likely to be entirely separate companies, even in the larger firms. Presently, a firm that is nominally an “architecture” or “construction management” firm may have experts from all related fields as employees, or to have an associated company that provides each necessary skill. Thus, each such firm may offer itself as “one-stop shopping” for a construction project, from beginning to end.

Several project structures can assist the owner in this integration, including design-build, partnering, and construction management. In general, each of these project structures allows the owner to integrate the services of architects, interior designers, engineers, and constructors throughout design and construction. In response, many companies are growing beyond traditional offerings of design or construction services alone, and are placing more emphasis on establishing relationships with other necessary participants through the design-build process.

The increasing complexity of construction projects creates the need for design professionals trained in all phases of the project’s life-cycle and develop an appreciation of the building as an advanced technological system requiring close integration of many sub-systems and their individual components, including sustainability. Building engineering is an emerging discipline that attempts to meet this new challenge.

CV. Find English equivalents in the text:

проектная группа -
современная тенденция -
ранее разобщенные специальности -
главный подрядчик -
специалисты по дизайну интерьеров -
совершенно разные компании -
заказчик-застройщик -
дочерняя компания -
из всех родственных областей -
необходимый навык -
несколько схем проекта -
управление строительством -
на всем протяжении создания проекта и строительства -
традиционные предложения -
строительные услуги -
придают большее значение -
другие необходимые участники -

процесс проектирование-строительство -
возрастающая сложность -
профессионал проектировщик -
продолжительность проекта -
оценка строительства -
строительство гражданских зданий -
развивающаяся отрасль -
передовая технологическая система -

CVI. Give Russian equivalents to the following:

integration -
among large firms -
developer -
more likely -
employee -
can assist -
partnering -
in general -
to integrate the services -
throughout design -
in response -
establishing relationships -
individual components -
including sustainability -
to meet this new challenge -
attempt -

CVII. Translate the text and say whether these statements are true or false:

158. Previously, architects, interior designers, engineers, developers and specialties like that were integrated companies.
159. Presently, experts from all related fields are more likely to be separated specialties.
160. An architecture or construction management firm may be a one- stop shopping firm for a construction project.
161. A project structure includes design-build, partnering and construction management.
162. The owner uses the services of architects, interior designers, engineers and constructors before the construction.
163. Many companies are growing thanks to traditional offerings of design or construction services alone.
164. Construction projects need project professionals.
165. Building engineering requires close integration of many subsystems.

CVIII. Choose the right variant:

110. The modern trend in design is toward integration of previously separated specialties, .

а) Современная тенденция в проектировании по направлению к объединению ранее разделяла специальности, ...

б) Современная тенденция в проектировании направлена на объединение ранее разобщенных специальностей, .

в) Современная тенденция в дизайне направлена на интегрирование и раньше делила специальности, .

CIX. . and general constructors were more likely to be entirely separate companies .

а) . и главные подрядчики больше всего предпочитали отдельные компании

б) . и главные подрядчики были более или менее самостоятельными компаниями .

в) . и главные подрядчики были вероятнее всего полностью самостоятельными компаниями .

CX. . many companies are growing beyond traditional offerings of design or construction services alone, .

а) . многие компании растут благодаря традиционным предложениям услуг проектирования или строительства, .
б) . многие компании растут не только благодаря традиционным предложениям услуг проектирования и строительства, .
в) . многие компании, растущие сверх традиционных предложений дизайна или конструкции, служат только, .

CXI. . creates the need for design professionals trained in all phases of the project's life-cycle .
а) ... нуждается в профессиональных проектировщиках, прошедших обучение на всех этапах проекта .
б) . создает необходимость для проектировщиков- профессионалов обучаться на всех стадиях проекта .
в) . нуждается в дизайнерах профессионально обученных на всех стадиях проекта .

CXII. . develop an appreciation ofthe building as an advanced technological system requiring close integration of many sub-systems ...
а) . совершенствование оценки здания как передовой технологической системы, требует тесной интеграции многих подсистем .
б) . совершенствование оценки строительства как передовой технологической системы требующей тесной интеграции многих подсистем
в) . совершенствование оценки строительства как передовой технологической системы тесно связанной со многими подсистемами .

CXIII. Continue the sentence:

166. Architects, interior designers, engineers, developers and construction managers .
111. . are separated now.
112. . were previously integrated specialties.
113. . were separate companies in the past.
167. Many companies are growing .
fff) . thanks to traditional offerings of design or construction services alone.
ggg) . thanks to establishing relationships with other necessary participants.
hhh) . thanks to experts from all related fields.
168. The increasing complexity of construction projects creates the need ...
uuu) . for design professionals trained in all phases of the design's life-cycle.
vvv) ... for building professionals trained in all phases of the project's life-cycle.
www) ... for design professionals trained in all phases of the project's life-cycle
169. An "architecture" or "construction management" firm may offer ...
oo) . the owner to integrate the services of architects, interior designers, engineers, and constructors throughout design and construction.
pp) ... its services for a construction project from beginning to end.
qq) . the owner to establish relationships with other necessary participants through the design-build process.

VII. a) Complete the table:

Noun	Verb	Adiective
separation	-	-
-	-	assisted
association	-	-
-	offer	-
allowance	-	-
-	-	emerging
creation	-	-
-	emphasize	-
training	-	-

CXIV. Choose the word from the table to complete the sentence:

170. Building engineering is an ... discipline that attempts to meet this new challenge.
171. Construction projects need design professionals . in all phases of the project's life-cycle.
172. Many companies are growing beyond traditional ... of design or construction services alone.

173. An “architecture” or “construction management” firm may have an ... company that provides each necessary skill.
174. Many companies are placing more ... on establishing relationships with other necessary participants through the design- build process.
175. The increasing complexity of construction projects . the need for design professionals.
176. Each of these project structures ... the owner to integrate the services of architects, interior designers, engineers, and constructors throughout design and construction.
177. The modern trend in design is toward integration of previously . specialties.
178. Several project structures can ... the owner in this integration.

VIII. Scan the text and answer the questions:

114. What kind of companies were architects, interior designers, developers, construction managers and general contractors in the past?
115. What is the modern trend in design?
116. Who can assist the owner in this integration?
117. What kind of experts may an “architecture” or “construction management” firm have presently?
118. What does each of these project structures allow the owner?
119. Are many companies growing thanks to traditional offerings of design or construction services?
120. Whom do construction projects need?
121. What does building as an advanced technological system require?
122. Is building engineering an emerging discipline?

Практическое занятие №18.

Тема 18. Authorityhavingjurisdiction/ Официальные контролирующие органы

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.

Теоретическаячасть:

Authority having jurisdiction

For a building that is contemplated, drawings are reviewed and must be accepted by both the building department and the fire department’s plan reviewers, following the application of a building permit.

The authority having jurisdiction (AHJ) during the construction of a building is the municipal building inspector, who is enforcing the local building code. Once construction is complete and a final inspection has been passed, an occupancy permit may be issued.
An operating building must comply with the fire code. The fire code is enforced by the fire prevention officer, who works for the local fire department.
Any changes made to a building including its use, expansion, its structural integrity, fire protection items require acceptance by the authority having jurisdiction (AHJ). A fire prevention officer may accept small changes, but anything affecting basic safety functions, no matter how small they may appear to the novice, may require the owner to apply for a building permit, to ensure proper review of the contemplated changes against the building code.

CXV. Find English equivalents in the text:

официальные контролирующие органы -
рассматривать, продумывать -
строительное управление -
эксперт-
управление пожарной охраны -
разрешение на строительство -
городской инспектор по строительству -
местные строительные нормы и правила -
разрешение на ввод дома в эксплуатацию -
действующее здание -
нормы пожарной безопасности -
офицер по пожарной безопасности -
местное управление пожарной охраны -
целостность конструкции -
противопожарные средства -
функции ОБЖ -

CXVI. Give Russian equivalents to the following:

to review -
to accept -
an application -
to enforce -
once -
to be complete -
a final inspection -
to pass -
to issue -
to comply -
an expansion -
to require -
to affect -
to appear -
a novice -
to apply -
to ensure -
proper -

CXVII. Translate the text and say whether these statements are true or false:

179. Drawings must be accepted by both the building department and the fire department’s plan reviewers before the application of a building permit.
180. The municipal building inspector is the authority having jurisdiction during the construction of a building.

CXVIII. An occupancy permit may be issued after the application of a building permit has been accepted.

CXIX. It's not obligatory for an operating building to comply with the fire code.
CXX. The fire prevention officer is the person who is enforcing the local building code.
CXXI. The authority having jurisdiction must accept any changes made to a building.
CXXII. A fire prevention officer may accept any changes affecting basic safety functions.

181. **Choose the right variant:**

123. Drawings must be accepted by both ., following the application of a building permit.
а) Чертежи должны быть приняты как ., следуя заявлению о разрешении на строительство.
б) Чертежи должны быть приняты как ., после заявления о разрешении на строительство.
в) Чертежи должны быть приняты как ., следствием чего должно быть заявление о разрешении на строительство.

124. Once construction is complete and a final inspection has been passed, ...
а) Однажды строительство будет закончено и окончательный осмотр проведен, .
б) Сразу же строительство прекращается и проводится заключительный осмотр, .
в) Когда строительство завершено и окончательный осмотр проведен, ...

125. Any changes made to a building including its use, ...
а) Любые изменения делают здание включенным в эксплуатацию, .
б) Какие-либо изменения, сделанные в сооружении, включают его использование, .
в) Любые изменения, сделанные в здании, включая его эксплуатацию, .

126. . may require the owner to apply for a building permit, to ensure proper review .
а) . может заставить владельца обратиться за разрешением на строительство, обеспечить правильный пересмотр .
б) ... может потребовать у владельца подачи заявления о разрешении на строительство и обеспечить соответствующий пересмотр .
в) . может потребовать, чтобы владелец подал заявление о разрешении на строительство, чтобы обеспечить соответствующий пересмотр .

CXXIII. Continue the sentence:

182. Drawings are reviewed and must be accepted by both the building department and the fire department's plan reviewers ...
127. after the application of a building permit.
128. before the application of a building permit.
129. after the application of an occupancy permit.

183. The municipal building inspector is enforcing the local building code .
iii) when construction is complete.
jjj) during the construction of a building.
kkk) when a final inspection has been passed.

184. The fire prevention officer works ...
xxx) for the building department.
yyy) for the municipal building department.
zzz) for the local fire department.

185. Any changes made to a building require acceptance .
rr) by the fire prevention officer.
ss) by the authority having jurisdiction.
tt) by the municipal building inspector.

186. A fire prevention officer may accept ...
i) any changes made to a building.
j) changes affecting basic safety functions.
k) any small changes.

187. Anything affecting basic safety functions may require the owner to apply .
c) for an occupancy permit.
d) for a final inspection.
e) for a building permit.

VII. a) Complete the table:

Noun	Verb	Adjective
-	prevent	-

-	-	accepted
-	save	-
-	-	applied
-	occupy	-
-	-	integrate
-	expand	-
-	-	enforceable
-	-	permitted

CXXIV. Choose the word from the table to complete the sentence:

188. Drawings must be ... by both the building department and the fire department's plan reviewers.
189. The municipal building inspector is the person who is ... the local building code.
190. Anything affecting basic safety functions may require the owner to apply for a building ..
191. The fire . officer works for the local fire department.
192. For a building that is contemplated the ... of a building permit should be accepted first.
193. An . permit may be issued after construction has been complete.
194. A fire prevention officer cannot accept changes affecting basic . functions.
195. Structural ... of a building, its use, ., and fire protection items require acceptance by the authority having jurisdiction.

VIII. Scan the text and answer the questions:

130. When must drawings be accepted?
131. Who represents the authority having jurisdiction during the construction of a building?
132. What does municipal building inspector do?
133. When may an occupancy permit be issued?
134. What must an operating building comply with?
135. Where does the fire prevention officer work?
136. What changes made to a building require acceptance by the authority having jurisdiction?
137. What changes may a fire prevention officer accept?
138. What may changes affecting basic safety functions require the owner?

Why may changes affecting basic safety functions require the owner to apply for a building permit?

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

Практическое занятие №19.

Тема 19. TownPlanning / /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.

Теоретическаячасть:

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

description	1. полный
purpose	2. основной
freedom	3. свобода
development	4. изменять
toexist	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
toadapt	16. соединять
creation	17. принимать
tosurround	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.

Вопросыизадания:

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. Proveyouropinion

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. Featuresofthetraditionaltownpattern.
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 . Proveyouropinion

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 townpatterns.

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.

Практическоезанятие №20.

Тема20. Design of the Complete Town./ Город под ключ.

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

Теоретическаячасть:

Design of the Complete Town

(1) In considering the design of a town or city we must always remember that the town must be sited in a healthy position, free from dust, fogs, its layout must not encourage winds through urban spaces, and it must not pollute its own atmosphere. It must provide proper standards of space and sunlight to its buildings and open spaces, and it must be possible to move about the town easily and without danger to life. Its parts must be so arranged that it is a convenient place for dwelling, working and playing.

(2) Connected with these and many other technical problems is the problem of economy. The problem must be thoroughly examined which does not suggest that the cheapest scheme may be the best.

(3) The town must work properly but it should also give pleasure to those who look at it. When we say that a town should be beautiful, we do not mean that it should have some fine parks and

noble buildings, we mean that the whole of the environment, down to the most insignificant detail, should be beautiful.

(4) If we examine a typical urban scene we see all kinds of objects like buildings, lamp posts, pavings, posters and trees. It is all of them, together with all the other kinds of objects that are found in the town, that are called the raw materials of a town design. Each of them down to the least important should be aesthetically satisfying.

(5) The town designer must think of his raw materials in terms of time. Not the time it takes to walk about them, although that is an important consideration, but their place in historical time, their effect on tradition, their immediate effect as contemporary objects, and their effect in future time.

(6)All new development takes place in an existing environment. That environment has taken centuries to form and the design must respect any features that have visual significance. It is more than vandalism to fall a tree that has taken years to grow, or to demolish a building of fine architectural qualities.

(7) Designing in terms of past time does not imply the imitation of the existing environment but respect of the form, colour, texture, and general qualities of the existing development. That which is being constructed is for immediate use which is not to suggest that there must be an attempt to ignore the past and be "modern".

(8) Future time must also be thought of in terms of the estimated life of the objects. Objects like buildings and lamp posts grow old and become out-of-date, and the designer must select those materials that are adequate for their life, no more and no less.

(9) Until comparatively recent times the growth of cities has been without purpose in any sense. Cities must grow, for growth is a law of life. But this natural overgrowth should have aroused action to restore balance. Mere size, as such, is no index of greatness.

(10) All overgrowth means overcrowding, which is loss of space, one of the vital needs of cities. The lesson that has to be learned is that natural growth, and all the other forms of growth, have to be made subject to will and intelligence, or the city must be harmed. This is a certain lesson of history.

(11) It is now generally becoming accepted that we need to redress the balance of population between one town and another, and between towns and the countryside. Very large towns should not be allowed to absorb more of the countryside and the groups of town should be prevented from turning into amorphous built-up areas.

Вопросыизадания:

Exercise 1. ***Define correct and incorrect statements. Correct wrong sentences. Proveyouropinion***

1. When building a town we should be very careful not to spoil what exists already. 2. The streets and buildings of existing towns will serve many future generations. 3. When designing a town we should not forget that its citizens should be able to move about it without any danger to their life.4. The economics of a town plan and the technical problems are closely connected. 5. Scientific forecast also includes progressive methods of planning. 6. The designer should select the best building materials for the objects of his planned town. 7. Citieswillgrowbuttheirgrowthmustbecontrolled.

Exercise*2. Put following points of a plan to the text in order. Add necessary points. Using these plan speak briefly on the topic of the text*

1. The whole town, and even its details, should be beautiful.
2. A town should be a nice place to live, to work and to rest in.
3. The town designer should remember that his raw materials will exist in the future.
4. All the objects in the town are called the raw materials of town design.
5. The raw materials of a planned town influence the existing environment.
6. City growth should be controlled.

Exercise ***3. Find in the text all necessary information to fill the table "Town planning". Point negative and positive features from the point of view of a town designer. Discuss these points with your groupmates***

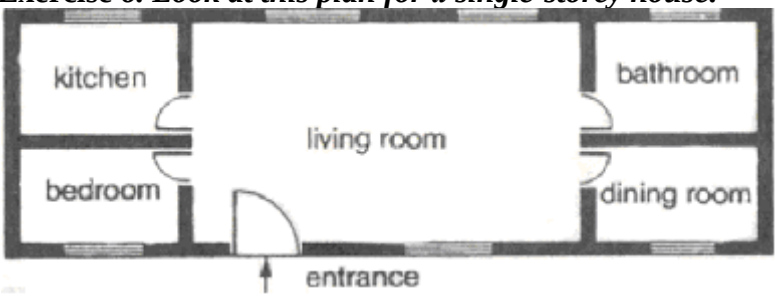
Features	Town plan	Flexible plan	Existing environment	Town pattern
Positive				
Negative				

Exercise ***4. Write a report "Town development" as you consider the future of Astrakhan. Pay attention to all points of the previous table***

Exercise*5. Listen to the text and fulfil some tasks. Find questions to these answers*

a) because people need to wash before going to bed
b) because people waiting to enter the house need protecting from the weather
c) because the noise from the living room wШ disturb people sleeping
d) because it makes serving food easier

Exercise ***6. Look at this plan for a single-storey house:***



Now read this discussion between an architect and his client:

CLIENT: I don't like this plan because the dining room and the kitchen are on opposite sides of the house.
ARCHITECT: So what!
CLIENT: Well, it is a long way to carry the food.
ARCHITECT: Does that matter very much?
CLIENT: Yes. 1 think it does, because the food wi1l get cold оп its way from the kitchen to the dining room.

Exercise ***7. Make simi1ar discussions 'between the architect and his client complaining about:***

а) the relative position of the bathroom and bedroom Ь) the relative position of the bedroom and living room с) the~ lack of a covered porch over the entrance.

Практическое занятие №21.

Тема 21. ***HousingandIndustrialConstruction*** **/** Жилищное и промышленное строительство**.**

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

Теоретическаячасть:

"HousingandIndustrialConstruction"

(1) In technically developed countries the building industry, comprising skilled and unskilled workers in manytrades, building engineers and architects, managerial staff and designers employs a considerable proportion of the available labor force.

(2) 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 single industry in the country. The problems of construction have grown into major, political issues in most countries.

(3) Housing is prominent among the factors affecting the level of living. The improvement of the housing represents a concrete and visible rise in the general level of living. In many countries residential construction has constituted at least 12 per cent and frequently more than 25 per cent of all world formation. Since in Russia home building industry is the concern of the state the research and development in housing technology is carried out on a national scale and is being paid much attention to.

(4) The ever growing housing demands have brought to lifenew methods of construction with great emphasis upon standardization, new levels of technological advance utilizing such techniques as offsite prefabrication, precutting, use of reinforced concrete panels and large-scale site planning. At present, prefabricated structures and precast elements may be classified into two principal groups—for residential houses and industrial buildings.

(5) Present-day designs for residential construction envisage all modern amenities for a dwelling, they advocate larger, better built and better equipped flats and houses. There is a marked improvement in the heating and ventilating systems as well as in hot-water supply, kitchen and sanitary fittings. Many tenants now can afford better furnishings, refrigerators, washing machines, etc. A house which is a physical environment where a family develops is acquiring a new and modern look.

(6) Industrial buildings comprise another significant type of construction. This type of construction involves factories, laboratories, food processing plants, mines, office buildings, stores, garages, hangars and other storage facilities**,** exhibitions halls, etc.

(7) Each of these functions demands its own structural solution and techniques. But in general they may be divided into two classes according to whether the plan must give greater attention to the size and movement of machinery or of persons. The building techniques (by techniques we mean building materials and methods) depend upon the types of buildings.

(8) Modern industrial buildings have demonstrated the advantages of reinforced concrete arches, metal frames, glass walls and prefabricated standardized mass produced parts. Steel was gradually substituted for iron and permitted wider rooms and larger windows. Windows can be enlarged to the extent that they constitute a large fraction of the wall area.

Вопросыизадания:

Exercise *1. Compose pairs of words. Findunnecessarywords*

меблировка1. housing
машинноеоборудование 2. offsiteprefabrication
сантехническоеоборудование 3. reinforcedconcretepanels
жилище 4. modernamenities

ж/б. панели
пищекомбинат
современные удобства
жилищное строительство
фабричноеизготовление

5.dwelling
6. kitchen
7. sanitaryfittings
8. foodprocessingplant
9. machinery
10. furnishing
11. metal frame

Exercise 2. ***Choose the sentence with the main idea of the text. Prove it***

1. In Russia home building industry is the concern of the state. 2. The building industry comprises skilled and unskilled workers in many trades. 3. Building industry which includes residential, public and industrial construction is being carried out on a large scale and it has brought into being new methods and techniques. 4. There is a marked improvement in the heating and ventilation systems as well as in hot-water supply.

Exercise 3. ***Find which paragraphs belong to the following titles. Put them in order***

1. The functions of industrial buildings.
2. New methods of housing.
3. Present-day design for residential construction.
4. The advantages of reinforced concrete for modern industrial buildings.
5. Building industry and National Economy.

Exercise 4. ***Point which of these ss have description of dwelling and which of them are industrial. Divide them into two groups***

1. In many countries residential construction has constituted at least 12 per cent of all world formation. 2. The problem of housing has grown into a major, political issue in most countries. 3. Industrial buildings comprise another significant type of construction. 4. Modern buildings have demonstrated the advantages of reinforced concrete arches, metal frames, glass walls. 5. The differing functions of industrial buildings require their own structural solutions and techniques. 6. Present-day designs for housing envisage allmodern conveniences and sanitary fittings. 7. Buildings may be divided into two classes according to whether the plan must give greater attention to the size and movement of machinery or of persons. 8. Windows can be enlarged to the extent that they constitute a large fraction of the wall area. 9. A house which is a physical environment where a family develops is acquiring a new and modern look.

Практическое занятие №22.

Тема 22. TypesofBuildings / Типы зданий.

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

Теоретическаячасть:

Types of Buildings

(1) Types of buildings depend upon social formations and may be classified according to the role in the community. The types of buildings may be domestic, educational, office, industrial, recreational, etc.

The type and the function of a building govern its design, building materials and techniques. But the common and necessary conditions are: (1)itssuitability to use by human beings in general and its adaptability to particular human activities (2) the stability and permanence of its construction.

(2) Speaking of residential construction we must say that the apartment houses are mostly built to suit urban conditions. Group housing provides home for many families and is at once public and private. The techniques of construction or the methods by which structures are formed from particular materials are influenced not only by the availability and character of materials but also by the total technological development of society.

(3) The evolution of techniques is conditioned by two factors: one is economic—the search for a maximum of stabilityand durability in building with a minimum of materials, labor and time: the other is expressive — the desire to produce meaningful form. Techniques evolve rapidly when economic requirements suggest new expressive forms or when the conception of new forms demands new procedures.

(4) Large housing programs have tended to stimulate technological change in the building industry. Craft operationsat the building site are being replaced by mechanizedoperations at the factory and houses are increasingly becomingassemblages of factory-made elements. Windows and doors,once made and fitted by carpenters at the site now arrive froma factory fitted and finished with hardware and glass, ready to be set in place. Modular design (i.e. design in which theelements are dimensioned in combinations of a fixed unit)has led to standardization of elements, interchangeability ofparts and increased possibilities for mass production, withresultant economies. A wide variety of mass-produced elementsfrom which substantial portions of the house can be assembledare now available. Examples are kitchen cabinets and mechanical equipment and window and door units. Entire apartmentassemblages are available and are being used to an increasingextent. These techniques aim at a higher output of betterstructures at lower cost.

(5) The high degree of mechanization and standardizationis successfully achieved by reinforced concrete blocks andunits. Reinforced concrete homes are produced by a varietyofconstruction methods. Various methods of constructingreinforced concrete houses involve extensive use of large sections manufactured in heavily mechanized factories and erected at the site.

(6) The built-in space of an apartment should be carefully thought of as well. The contemporary trend is expressedby joining the living and dining areas into a single space orby relating the kitchen and dining areas. It has becomeincreasingly important as rooms that have become smallershould appear as spacious as possible. Therefore, there is aconsiderable trend toward built-in furniture. Rooms should beboth efficient and visually satisfying. The extent of built-incabinets must be determined. Drawers and shelves can oftenbe concealed behind walls, freeing valuable floor space.

(7) The windows and doors must look well from the interior as well as from the exterior. Satisfactory functioning isalso involved; windows must be sized and located for the bestpossible lighting and ventilation; as for electricity it should bementioned that the electric load of most houses has increasedenormously as standards of lighting rose and mechanicaland household equipment multiplied. Great technologicaladvances have been made in plumbing. Much progress hasbeen made with respect to standardization and production ofthe elements of kitchen equipment.

Вопросыизадания:

Exercise 1. ***Choose the sentences with the main idea of the text. Prove it***

1.Great technological advances in plumbing and ventilation systems. 2. The types of walls of concrete structures. 3. The types of exterior concrete surface. 4. Classification of buildings according to their functions, building techniques and factors affecting the latter.

Exercise 2. ***Compose certain paragraphs under each title***

1. A wide variety of mass-produced elements of the house are available now.
2. The built-in space of an apartment should be carefully thought of as well.
3. The type and the function of a building govern its design and materials.
4. The electric load of most houses has increased enormously.

Exercise 3. ***Finish these sentences with suitable endings***

1. Various methods of constructing reinforced concrete houses involve...

a) . . . craft operations at the building site;
b) . . . building materials, labour and time;
c) . . extensive use of large sections manufactured in heavily mechanized factories;
d) . . .total technological development of society.

2. Types of buildings depend upon...

a)….the availability and character of materials;
b)…design, building materials and construction techniques;
c)...increased possibilities for mass production;
d) . . . social functions in the society.

3. The high degree of mechanization and standardization is successfully achieved by…

a) . . . reinforced concrete blocks and units;
b) . . . technological change in the building industry;
c) . . . craft operations at the building site;
d) . . . joining the living and dining areas into a single space.

Exercise 4. ***The government of RF set forth the program of housing and capital building in our country. What principals from these texts will help to fulfill this program in time and how must designers and engineers improve building methods and techniques just now? Write a composition on the topic "The RF program of housing and capital building in my conception" following the plan:***

1) Necessity of the program
2) Latest achievements in construction of buildings
3) Improvements are to be in certain field of construction

Практическоезанятие №23.

Тема23. Sanitary engineering in the modern town. Panelheating/Сантехника в современном городе. Панельное отопление

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) Heating and ventilation are two branches of engineering which are very closely connected, they are therefore treated as a dual subject. Both are concerned with providing a required atmospheric environment within a space, the former with respect to heat supply to produce a desired temperature for maintaining comfort, health or efficiency of the occupants, the latter with regard to supply and removal of air frequently with emphasis on contamination of the air. Air-conditioning is closely related to both heating and ventilation and will therefore bedealt with later.

(2) It is for heating to prevent the too rapid loss of heat from the body. By heating the ambient air of walls, ceiling or floor the rate of heat loss from the body is controlled. Some old concepts of heating were gradually changed since engineers obtained more precise knowledge about how the body loses heat. Insufficient attention was paid formerly to loss by radiation, which is the transmission of energy in the form of waves from a body to surrounding bodies at a temperature. The human being also loses heat by conduction (through his clothes) and convection, the latter by air currents not only past his skin or outside clothing surface but also by evaporation of moisture from his skin (respiration). The determining of the capacity or size of the various components of the heating system is based on the fundamental concept that heat supplied to a space equals heat lost from the space. The most widely used system of heating is the central heating, where the fuel is burned in one place—the basement or a specially designed room and from which steam, hot water or warm air is distributed to adjacent and remote spaces to be heated.

(3) There are two most common systems of heating—hot water and steam. Both systems are widely used nowadays. A hot-water system consists of the boilers and a system of pipes connected to radiators suitably located in rooms to be heated. The pipes, usually of steel or copper, feed hot water to radiators or convectors which give up their heat to the room. The water, now cooled, is returned to the boiler for reheating.

(4) As for steam systems, steam is generated usually, at less than 5 pounds per square inch in the boiler and the steam is led to the radiators through or by means of steel or copper pipes. The steam gives up its heat to the radiators and the radiator to the room and the cooling of the steam condenses it to water. The condensate is returned to the boiler either by gravity or by a pump. The air valve on each radiator is necessary for air to escape. Otherwise it would prevent steam from entering the radiator.

(5) Recent efforts to completely conceal heating equipment have resulted in an arrangement whereby the fluid, whether it be hot water, steam, air, or electricity, is circulated through distribution units embedded in the building construction. Panel heating is a method of introducing heat to rooms in which the emitting surfaces are usually completely concealed in the floor, walls, or ceiling. The heat is disseminated from such panels partly by radiation and partly by convection, the relative amounts depending on the panel location. Ceiling panels release the largest proportion of heat by radiation and floor panels the smallest. The proportion of heat disseminated by radiation and convection is also dependent to some extent upon panel-surface temperatures. The basic advantage claimed for a panel heating system is that of comfort.

(6) Application of certain panels is frequently restricted by structural details. Other factors

to be considered are type of occupancy, furniture or equipment location, large glass areas, heat-storing capacity of building construction, room height, possible change of wall partitions, climate, exposure, and first cost.

As for fuels used for heating buildings they include coal, oil, manufactured and natural gases and wood. There are two other sources: electricity and steam. Nowadays gas fuel is being used on an ever increasing level.

Вопросыизадания:

Exercise 1. ***Find correct Russian translation of English words. Compose sentences with them on the topic of the text. Find unnecessary words***

cooling	1. потолок
space	2. обеспечивать
maintain	3. отопление
removal	4. окружающаясреда
contamination	5.паровое отопление
loss	6. определение
precise	7. получать, изобретать
equal	8. равный
heat supply	9. применение
environment	10. удаление
toobtain	11. потеря
determination	12. точный
provide	13. загрязнение
steam heating	14. охлаждение
ceiling	15. поддерживать
	16. пространство
	17. топливо

Exercise 2. ***Define which of these statements contain the main idea of the text***

1. The human being loses heat by conduction and convection. 2. Heating is a branch of engineering which is concerned with providing heat supply to produce a desired temperature within a space. 3. A hot-water system consists of the boilers and a system of pipes.

Exercise 3. ***Put these sentences in order according to the text***

1. Fuels used for heating buildings. 2. Some old concepts of heating. 3. Theprincipleofcentralheating.

Exercise 4. ***Find the correct answer to these questions. Prove your opinion***

1. What are heating and ventilation concerned with?

a) Heating and ventilation deal with supply and removal of air; b) Heating and ventilation are concerned with providing a required atmospheric environment within a space; c) Heating and ventilation are meant for heat supply to produce a desired temperature.

2. Why do industrial buildings maintain a lower air temperature?

a) Industrial buildings maintain a lower temperature because it is necessary for the machinery they have; b) Industrial buildings where the degree of activity is high maintain a lower air temperature because the heat loss from the body is greater and a compensatory heat balance is provided; c) Industrial buildings maintain low temperatures because they have great amount of outside wall space and lose considerable amounts of the heat supplied.

3. What is the basic advantage of panel heating?

a) The basic advantage of panel heating is that of comfort; b) The basic advantage of panel heating is that of heat being uniformly disseminated; c) The basic advantage of panel heating is its low cost.

Exercise 5. ***Which paragraphs deal with these questions? Give brief explanations to each of them***

1. What makes panel heating so very comfortable? 2. What does a hot-water system consist of? 3. Whatisthemostwidelyusedsystemofheating?

Exercise 6. ***Which of these sentences explain the work of heating and which ones – ventilation?***

1. This branch of engineering is concerned with supply and removal of air with emphasis on contamination of the latter. 2. This system consists of the boilers and a system of pipes connected with radiators located in rooms. 3. There is a certain method of introducing heat to rooms in which the emitting surfaces are usually completely concealed in the floor, walls or ceilings. 4. This branch of engineering has gradually come to be associated with cleaning of air.

Exercise 7. ***Prove these statements, add some more information from the text***

1. As for fuels we use for heating buildings, they include coal, oil, manufactured and natural gases. 2. Some time elapses between the moment the steam gives up its heat to the radiators and the time the cooling of the steam condenses it to water. 3. Industrial buildings often present special problems which the designers find most difficult to solve. 4. There are certain industrial processes we know to be accompanied by the production of air-born dust. 5. Were all-year air-conditioning systems set up, all the processes required for winter and summer air conditioning could be performed. 6. Floor panel heating we so often find in one-story and base-mentless structures is of great comfort and low installation cost. 7. Some old concepts of heating were gradually changed since engineers obtained more precise knowledge about the heat the human body loses.

Практическоезанятие №24.

Тема 24. Sanitary engineering in the modern town. All-year Air Conditioning, Ventilation, Gas Supply/Сантехникавсовременномгороде. Круглогодичный кондиционер, вентиляция, газоснабжение

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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

Теоретическаячасть:

(1) Air conditioning implies the control of temperature, humidity, purity and motion of the air in an enclosure. In our modern world of science and highly developed technology air conditioning is of a great significance for industrial processes as well as for human comfort. As an example it must be mentioned that during the manufacture of extremely delicate equipment such as inertial guidance systems for rockets, airplanes or submarines both temperature and humidity must be closely controlled and air purity provided at an extremely high level.

(2) Air conditioning for human comfort is employed inboth large and small installations, such as theatres, officebuildings, department stores, residences, airplanes, railways,cars and submarines. According to their purpose air conditioning systems may be described as winter, summer and all year systems. Considering their basic design they are calledunit or central air conditioners.

(3) All-year air-conditioning systems must provide meansfor performing all the processes required for winter and summer air conditioning. The basic pieces of equipment are thefilters, preheat coils, humidifiers, dehumidifiers, reheatcoils, additional cooling coils, fans and controls. The control of air purity can be achieved in various degrees. As aminimum control some sort of filtering must be done near theentrance of the air-conditioning system. Possibly the mostefficient filtering device is the electrostatic precipitator.

(4) In order to establish the size and operational requirements of an air-conditioning system, the maximum probableheating and co-demands have to be calculated. The maximumprobable heating demand is usually for winter air conditioning and it involves heating and humidifying. The maximumprobable cooling demand is generally for summer applications and requires cooling and dehumidifying. The inside designconditions depend entirely upon the purpose for which airconditioning is used. Certain industrial process requirementsand human comfort are the two major factors to be considered.With ever increasing tendencies to use air-conditioning abuilding engineer must have sound knowledge of the subject.

(5) As far as ventilation is concerned the modern theoryto this effect can be summed up in the statement that forplaces of general assembly the purpose of ventilation is to carryaway excess heat and odors and that normally 10 cu. ft perminute of outside air per person is sufficient to accomplish this objective. In buildings such as homes, the leakage ofair through cracks in doors and windows is usually sufficient to meet this requirement. Although ventilation was formerly concerned with the supply of fresh air to and the removalof hot and contaminated air from the space it gradually cameto be associated with cleaning of air.

(6) Industrial buildings often present special problems in ventilation. There are certain industrial processes that are accompanied by the production of air-born dust, fumes, toxic vapors and gases which are hazardous to the health of workers. Three types of ventilation are in use so that to control dangerous gases and dusts: exhaust systems, dilution systems and combinations of both. The contaminated air is exhausted at high velocity from hoods which have sufficient entrance velocity to pick up the contaminants.

(7) Another indispensable part of modern amenities is gas supply. It has come now to be of a very wide use. With an intensive exploration of finding natural gas it has gradually replaced the manufacture in its utilization. At the present time natural gas is put to large-scale economic use. The principal utilization of natural gas is as a clean, convenient, economical source of heat. In homes it is used for cooking, water heating, refrigeration for food as well as for space heating. Nowadays most of the homes are heated by natural gas and the number of gas-supplied homes was increasing at a rate limited chiefly by the ability of the steel industry to produce the pipe through which the gas is transported. Natural gas supply is used also as a heat source in commercial establishments such as restaurants and bakeries for cooking and in stores, offices and other commercial buildings for heating and comfort cooling.

Вопросыизадания:

Exercise 1. ***Find correct Russian translation of English terms. Compose sentences with them on the topic of the text***

modern	удобство
human	скопление *(людей)*
technology	особый
to manufacture	современный
comfort	человеческий
residence	стремление
tendency	связывать
assembly	естественный
associate	техника
special	производить
natural	жилище

Exercise 2. ***Mark which paragraphs these titles belong to. Place them in order according to the text***

1. Gas supply as an important part of modern amenities.
2. Ventilation for industrial buildings.
3. The importance of air-conditioning for human comfort.
4. The basic parts of equipment for an all-year air-conditioning system.

Exercise 3. ***Finish these sentences***

1.Air conditioning implies...

a) …rapid loss of heat, b) …the transmission of energy in the form of waves, c) ...provision for the expansion of the water, d) …the control of temperature, humidity, purity and motion of the air.

2.The purpose of ventilation is...

a) …to produce a desired temperature for maintaining comfort, b) …to supply heat for cooking and space heating, c) ...to maintain air purity at an extremely high level, d) …tocarry away excess heat and odors.

3.The basic pieces of air-conditioning equipment are...

a) ...stokers, coal furnaces and boilers, b) ...filters, preheat coils, humidifiers, reheat coils, fans and controls, c) ...boilers and a system of pipes, d) ...systems of steel and copper pipes.

Exercise 4. ***Divide these sentences into three groups***

A. Air Conditioning. **B.**Gas Supply. **C**. Ventilation.

1. Gas supply has come to be very widely used. 2. Inindustrial buildings three types of ventilation are in use so as to control dangerous gases and dusts. 3. In buildings such as homes, the leakage of air through cracks in doors and windows is usually sufficient. 4. As for the purpose air-conditioning system may be described as winter, summer and all-year. 5. The main utilization of natural gas is as a clean, convenient, economical source of heat. 6. Natural gas supply is used also as a heat source in commercial establishments. 7. Certain industrial process requirements and human comfort are the two major factors to be considered when designing air-conditioning system. 8. Air conditioning is meant for the control of temperature, humidity, purity and motion of the air in an enclosure. 9. The main purpose of ventilation is to carry away excess heat and odors.

Практическоезанятие №25.

Тема 25. Sanitary engineering in the modern town. WaterSupply./Сантехника в современном городе. Водоснабжение.

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

Теоретическаячасть:

(1) Water is an important part of nature which surrounds us and of those natural conditions we are changing constantly and ever more intensively: the flora, the soil, the mountains, mineral resources, the deserts, the marshes, the steppes and the taiga.

(2) Water passes through a very interesting natural cycle. The atmosphere which surrounds the earth's surface contains water which varies in amount in direct proportion to the temperature of its gases. Water is also evaporated into atmosphere. Atmosphere which has become saturated with water precipitates its moisture when the temperature lowers. This phenomenon is termed rainfall. The moisture falls to the earth and finds its way into a number of reservoirs provided by nature.

(3) Vast depressions in the earth are filled with water through the medium of natural water sources such as rivers, lakes, etc. over the earth's surface. These bodies of water are classified as inland lakes and are excellent sources of water.

(4) Sometimes the rainfall finds its way into the soil and forms water bodies at various levels because of the impervious nature of the under soil. Often a water body deep in the soil consists of a sand or gravel stratum which connects or empties into the basin of an inland lake and provides a splendid source of water supply through the medium of a drilled well.

(5) Man uses water for domestic and sanitary purposes and returns it to the source through sewage disposal system. Industry likewise replaces water diverted to its use. Hencethe cycle is completed but it is of prime importance that the supply be protected against pollution, for if it fouls no one can predict how disastrous may be the results.

(6) An adequate supply of pure, wholesome and palatable water is essential to the maintenance of high standards of health and to provide the convenience modern society demands. In some localities water is available in unlimited quantities and converting it to use is not a difficult problem. This is especially true of towns situated on large inland lakes or rivers. On the other hand there are cities where geographical location requires elaborate systems of water supply, and to provide a satisfactory supply of water in these localities becomes a large engineering task.

(7) The importance of a sufficient supply of water for domestic and industrial purpose has long been a deciding factor in the location of cities. The earliest settlers realized this need and took advantage of natural water sources by establishing colonies in close proximity to them.

(8) Water may be taken from any sources of water for human consumption after it has undergone a preliminary treatment to assure its purity. As man's communities grew in population,

the demand for water increased and the need for protection of the source of water supply against the possibility of contamination became evident. Progress and civilization have called for elaborate and various systems and methods of water treatment.

Exercise *1. Mark which paragraphs devote to the title of the text*

Exercise 2. *Choose suitable translation of English words from Russian ones. Compose sentences with them on the topic of the text*

natural water sources	водоснабжение
bodyofwater	подпочва
inland lake	беспримесность
water supply	влага
water treatment	слой, пласт
purity	загрязнение (заражение)
contamination	система удаления сточных вод
sewage disposal system	насыщенный
pollution	обработка воды
through the medium	материковые озера
under soil	saturated
consumption	tofoulstratum
moisture	
естественные источники воды	загрязнение
загрязнять(ся)	при помощи, посредством
водный массив	

Exercise *3. Point which of these sentences have the main idea of the text. Explain your point of view*

1. Ontheearthwatercanbeobtainedfromdifferentnatural sources. 2. At present the problems of water supply and treatment are the most essential for mankind. 3. Water taken from natural sources such as rivers and lakes often requires aeration.

Exercise 4. *Which of these statements contain the basic of the text. Put them in accordance with the context*

1. An adequate supply of water is one of the main requirements for maintaining high standards of health. 2. Vast depressions in the earth filled with water and known as inland lakes are excellent sources of water. 3. The rivers and lakes contain a great amount of chemical and biological pollution. 4. Nowadays the problem of water treatment has become very urgent. 5. On the earth water passes through a very interesting physical cycle. 6. Water bodies deep in the soil are excellent sources of water. 7. Man after using water returns it to the source by means of sewerage systems; thus the cycle is completed. 8. Water is an important part of nature. 9. Man's earliest settlements were always close to natural water sources.

Exercise 5. *Add these sentences with correct variant according to the text. Using as a plan speak briefly about Water Supply*

1. An adequate supply of pure wholesome and palatable water...

a) ...is especially true of towns situated on large inland lakes or rivers, b) ...is essential for the maintenance of high standards of health, c) ...may be taken from any source of water, d) ...should be protected from contamination by filtration.

2. There are cities whose geographical location...

a) ...makes water pass through a very interesting cycle of treatment, b) ...requires elaborate systems of water supply.

c) ...makes the problem of water supply very difficult.

d) ...calls for modern systems of water treatment.

3. The earliest settlers took advantage of natural water sources by...

a) ...building water power stations on them, b) ...establishing their colonies near them, c) ...providing sufficient water supply for their needs, d) ...using water without much preliminary treatment.

4. Due to man's vast activities at the present time... a) ...various systems and methods of water treatment arerequired, b) ...water must be obtained in unlimited quantities, c) ...many inland lakes cannot be used as sources of water supply, d) ...splendid sources of water supply are drilled wells.

Exercise 6.*Fill this table due to points of the topic Sanitary engineering*

Panel Heating	Air conditioning, Ventilation, Gas supply	Water supply

To provide a required atmospheric environment within a space; to evaporate into atmosphere; to imply the control of temperature, humidity, purity and motion of the air in an enclosure; vast depressions; to produce a desired temperature for maintaining comfort, health or efficiency ; to provide a splendid source of water supply ; to provide means for performing all the processors required air conditioning; to prevent loss of heat; for domestic and sanitary purposes ; sewage disposal system; control of air purity in various degrees ; the transmission of energy; conduction and convection ; to require cooling and dehumidifying; central industrial process requirements and human comfort; boilers and a system of pipes connected to radiators; to undergo a preliminary treatment to assure purity; to carry away excess heat and odors; leakage of air; to circulate through distribution units embedded in the building construction; to disseminate from panels; a clean, convenient, economical source of heat.

Exercise 7. *Using information from the texts and this table compose a dialogue "Service engineers " for three persons. Discuss process of equipment of any new-built structure with all modern conveniences*

Exercise *8. Make a written report about one of the type of Sanitary Engineering describing step-by-step arrangement of your project with this convenience*

РАЗДЕЛ 4. ARCHITECTURE OF A HOUSE/АРХИТЕКТУРАДОМА.

Практическое занятие №26.
Тема 26. OrientationandSurveyingtheBuilding/Планировкаиобследованиездания

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:

Orientation and Surveying the Building

Before beginning construction of any building it is necessary to consider several problems connected closely with the lot where the building is to be erected. Some of these problems are as follows:

1. *Soil.*—Soil is a very important problem in the building of any house. The land may have a sufficient depth of rich top soil, but beneath it may be a ledge of soil rock, which will make the excavation for a basement very expensive especially in climates where the footings must be carried down below the frost line.

2. *Transportation.*—The problem of transportation is the most important one during the whole period of construction on the building site. One must see if there is a sufficient means of erecting ways for bringing up the materials and men for construction work.

One must also see if there is a sewerage line, water supply line, gas line, the electric power line, and how all of them can be used.

3. *Surveying.*—A survey is a plan of a piece of land showing its exact dimensions and levels, the lot boundaries with relations to adjacent streets and lanes, the location and the levels of existing sewer and water mains, electric light, gas services, etc.

Styling of a Building. —When all things mentioned above are carefully considered, another point must be kept in mind. This is the "style" in which the building is to be planned or, in other words, its exterior appearance.

If we have to design a house, there is a number of practical considerations which will have an effect upon the design of a house.] Some of these are as follows:

1. Height of first floor above ground.

2. Ceilings' heights. The height of the ceiling, that is clear height from floor to ceiling, is a matter to be determined by the designer.

Other Constructions.—The first houses were merely shelters built for the purpose of protecting their owners from weather and therefore were very simple—a roof to keep off the rain, and the walls to keep out the wind.

In the beginning there were no windows. A little later each house had its fireplace and a masonry chimney. For many years, even centuries houses were built without any conveniences. There was no plumbing, no water supply, no heating system, no electric light. Very gradually a change came about, especially in cities.

First there was plumbing, running water in the kitchen, then hot water, then fully equipped bathrooms.

The latest thing is air conditioning and comfort cooling. To the work of the carpenter, to mason, the plasterer and the roofer, has added the work of the so called mechanical trades: the plumbers, the steam-fitters and the electricians.

The requirements of these mechanical trades must be provided for in the planning.

Lines of heating and water drainage pipes and air ducts must run through the house, and, as they are not ornamental, arrangements must be so that they can be concealed in the walls and floors.

The same is concerned of the electric wiring. For a long time people were so proud of their heating system that they did not mind looking at the radiators, but now the central heating is commonplace; many people dislike their ugliness and want them concealed in the walls.
Now the architect who makes plans for a house must foresee what is necessary for all the piping and wiring and must make suitable allowance.

Tasks after reading:

5. Compare your variants of key-sentences with given ones. Choose the best, prove your opinion. Put them in order

1.Excavation for a basement is a very important problem in the building.
2.Exterior appearance has a number of practical considerations.
3.In the beginning there were only roofes and walls in ancient buildings.
4. To fullfil building sufficiently it is necessary to have erecting ways, sewerage line etc.
5. The latest invention was air conditioning and comfort cooling.
6. Nowadays people dislike current placement of central heating and want to conceal it in walls.
7. It is necessary to have a plan of landscape before erecting any structure.

6. Using statements as a plan from ex. 5 speak briefly about Architectural design of a building

Tasks before reading:

7. Find suitable translation of Russian terms. Explain their meaning in English

thought	уровень,
draw	фасад
mention	крыльцо
selection	соответствовать
dwelling	похожий на коробку
lot	вход, въезд
reference	размер
point	случаться
decision	опасность
spend	схватываться
elevation	руководить, управлять
opening	шифер
feature	современный
occure	расположение
outside	целиком, полностью
surface	плоский, ровный
scale	управлять
as regards	желание
set	содержать
price	хотя, однако
carry out	смягчать, модифицировать
properly	угол
award	масштаб
location	привычный
porch	черепица
bay-window	порог, подоконник
depend upon	чертить
guide	показывать, предъявлять

primarily	применимый
cost	простирающийся
desire	створчатый
let	хозяйственный
modify	что касается
conform	площадка, участок
select	должным образом
entirely	обшивочный
extending to	противовес
corner	упоминать
flat	задний, дополнительный
box-like	створка
accustomed	качать, колебаться
govern	цена
siding	сплошной, плитный
shingles	прачечная
stucco	черта
plaster	соответствовать
handle	хранение, хранилище
slate	позволить, разрешить
tile	зависеть
sill	ставня
locality	кабинет
show	ссылка, упоминание
apt	навесить на петли
applicable	в добавление
entrance	проводить
size	внешняя штукатурка
rear	развлечение, отдых
danger	выполнять
suit	обращаться, управлять
double-hung	поверхность
casement	раздвижной
counterweighted	жилище, жилой
sash	присуждать, награждать
hinge	местоположение, местность
swing	современный
shutter	проем, отверстие
blind	игровой
solid	эркер
up-to-date	выбор
contain	решение
utility	стоимость, стоить
laundry	удачный, способный
storage	ставня
entertaining	снаружи
in addition	штукатурный гипс
present-day	точка
recreation	обшивка
den	первоначально
	отбирать, выбирать

8. Find suitable translation of Russian terms concerning design of any structure. Composesentenceswiththem

Фасад, крыльцо, вход, порог (подоконник), створка, прачечная, хранилище, ставня, кабинет, жилище, проем, игровая комната, эркер

9. Translate terms of building materials. Divide them according to the parts of building(ex.8)

Шифер, черепица, створчатый. обшивочный, сплошной, внешняя штукатурка, раздвижной, навесить на петли, штукатурный гипс, обшивка.

10. Compose suitable word combinations. Explain their meaning

four
door
window
outside
exterior
floor
general
completed
flat
box-like
entrance
double- hung
basement
counterweighted
hinged
swinging
bay
wooden
solid
slatted
up-to-date
present day

openings
surfaces
walls
plans
elevations
dimensions
building
areas
roof
sashes
doors
windows
sills
appearance
shutters
house

Практическое занятие №27.

Тема 27. Styling of a House. Designing Elevations./Стиль дома. Проектирование высоты дома.

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:

I. Styling of a House.—When a house is to be built there are a number of things which should be given careful thought before the work is started and even before the plans for the building are drawn.

Among these may be mentioned the selection of the lot on which the dwelling is to be built, the position of the house and garage on the lot with reference to the streets and the position of the different rooms with reference to the four points of the compass—North, South, East and West. At the same time when these things are being considered, another point must be kept in mind, that is the "style" in which the building is to be planned or, in other words, its exterior appearance. This decision should be made before plans for the house are started. The important question is also how much money can be spent on the building.

II. Designing Elevations. — An elevation is a drawing showing one side of a building. Since most houses are rectangular in plan, there will usually be four elevations. All the door or window openings and other features of construction which occur on the outside surfaces of the exterior walls can be shown on the elevations in their true dimension (to scale) as regards width and height. The elevations are practical working drawings, the purpose of which is to give to the workmen the information necessary in order that they may first set a price on the work to be done and then carry it out properly after the contract has been awarded.

The floor plans are also prepared for this purpose. The elevations must agree with the plans in giving the general dimensions of the house and the location and width of the door and window openings on each floor and other features such as balconies, porches, terraces, bay-windows, etc. Taken together the plans and elevations give the length, width, and height of every part of the house in such a way that when the various parts are built to these dimensions, they will form the completed building just as the designer saw it in his mind when he was making the drawings.

The choice of style of elevation depends upon several factors. Some are guided primarily by cost, others by desire for a certain style. Most people are concerned with the arrangement of rooms—the floor plan—and will let the exterior of the house be modified as necessary to conform to the floor plan selected. Elevations for houses in the Modernistic Style are entirely different from those for traditional houses. They usually have extremely large window areas, extending to and around the corners of the building. This with the flat roof, makes almost box-like appearance, which seems strange to one accustomed to the traditional style.

Material for Elevation.—The choice of material is governed by the style and by the cost. Many styles can be worked out in any several materials or in combinations of two or three. Brick and siding, shingles and siding, brick and stucco, wood, plaster, stone and concrete—all can be handled in interesting fashion. The materials used for roofs are shingles, slate or tile. Tile and shingles are in most cases the most expensive roof materials, slate is less costly. For wall construction, brick is cheaper than siding, and brick cheaper than stone, in most localities.

The elevations show the heights of all openings in the outside walls and the height of the window and door sills above the finished levels of the different floors. Exterior doors are apt to be 2 feet8 inches or 2 feet10 inches wide and 6 feet8 inches or 6 feet10 inches high. The larger sizes are to be applicable to the front entrance door and the smaller sizes to the rear entrance

door. There is a danger in making exterior doorway too narrow, because furniture and other things must be carried through them. The front entrance door should be of a good design in keeping with the style of the house.
Window openings can be of various sizes to suit the ideas of the designer. There are two kinds of windows used in houses. There are the double-hung and casement windows. The first consists of two counterweighted sashes sliding up and.down; the second has one or two sashes hinged at the side and swinging horizontally in or out. There is also a bay window which is seldom seen today. Wooden shutters or blinds are often used on some of the windows of a house. Sometimes they are solid and sometimes slatted. An up-todate house must contain one or more bedrooms for sleeping, a kitchen for preparing the meals, a dining room, a utility room for laundry and storage, and a living room for reading, writing, entertaining visitors and so forth. In addition to these rooms every present-day house contains a bathroom and may include a recreation room in the basement, and a den or study.

Tasks after reading:

12. Do you agree with the following statements characterizing the main idea of the points " Styling of a house" and " Designing elevations"
1. Some points must be kept in mind before building any structure: surrounding medium and exterior appearance of future construction.
2. The choice of style elevation depends upon several factors: cost, desire, arrangement of rooms, building materials.

15. Divide words from ex.14 into six groups in accordance with these localities. Compose your own sentences with them

bedroom	kitchen	dining room	living room	utility room	bath room

Практическое занятие №28.
Тема 28. *Architecture of a house*./ Архитектура дома
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

Теоретическаячасть:

1. Answer these questions. Using them as a plan speak briefly about "Architecture of a house"

1. What kind of things should be given careful thought before the plans for the building are drawn? Why?
2. What means an elevation?
3. What kind of dimensions can be shown on the elevation?
4. What is the purpose of elevation?
5. What for the floor plans are prepared?
6. What do the plans and elevations give taken together?
7. What factors does the choice of style of elevation depend upon?
8. What is the choice of materials governed by?
9. What materials used for roofs? Walls?
10. What size should the door be? What are differences between front and rear doors? Why?
11. How many kinds of windows used in houses? What are they?
12. What means an up-to-date house?

Tasks before reading:

2. Find correct translation of English words. Explain their meaning

arrange	хранение
foul	размещать, помещать
escape	меблировать, обставлять
accomplish	приемная, гостиная
blow	позволять, разрешить
hallway	дуть
closet	занавеси
properly	установка
preservation	порционирование
storage	простирающийся
serving	прачечная
preparation	облицовка
accommodate	откидной, створчатый
partition	оборудование
preferably	грязный
lighted	хозяйственный
facing	приготовление, подготовка
guest	прибор, приспособление
handsomely	скользящий
furnished	должным образом
reception	стиральная машина
entertainment	красиво, изысканно
spare	утечка
allow	развлечение, угощение
ranging	кухонный

curtain	действенность, эффективность
folding	выход в холл
sliding	водопровод
utility	перегородка
plant	располагать
laundry	освещенный
tub	запасной
equipment	гость
efficiency	сохранение
plumbing	ванна
fixture	совершать
bathtub	предпочтительно
wash basin	туалет, умывальная раковина

Architecture of a house

Bedrooms. Bedrooms should be so arranged in the house plan that each one will have cross-ventilation, that is so, that the fresh air can enter the room through one window and the foul air escape through another. This should be accomplished in such a way that the air will not blow directly over a bed. To meet this requirement, it is necessary that at least two of the walls of each bedroom be outside walls with a window. This means that each bedroom must be a corner room. Another requirement is that the bedroom door should open out of the hallway or a corridor, never out of another bedroom. Besides the entrance door, there is always one closet door, and a door to a bathroom.

Kitchens.—In a properly planned kitchen there are three principal centres of activity, as follows:

1. the preservation and storage centre,
2. the cooking and serving centre,
3. the preparation and cleaning centre.

These can be comfortably accomodated in a kitchen 7 feet6 inches by 10 feet.

Dining room.—Such a room should be next to the kitchen with only a partition between them. It should be at least 11 feet by 12 feet and preferably 12 by 15 feet in size. Dining room should be well lighted by a large window or windows facing so as to let the morning sunshine come into the room.

Living room.—The room which is. used more than any other during the afternoon and evening is the living room. This room is also the one most often seen by guests, and may be said to be the show room of the house. For these reasons the living room is usually the largest room and the most handsomely furnished. In the smaller houses it is used by all members of the family as reception room, library, music room, study, entertainment room, and play room, and at times it becomes a spare bedroom. The room should be as large as can be allowed, ranging from 12 feet by 16 feet up to 20 feet by 26. The entrance should be of good width and centrally located. Often there is no door, but only a door opening which may be closed by means of curtains or by folding or sliding doors.

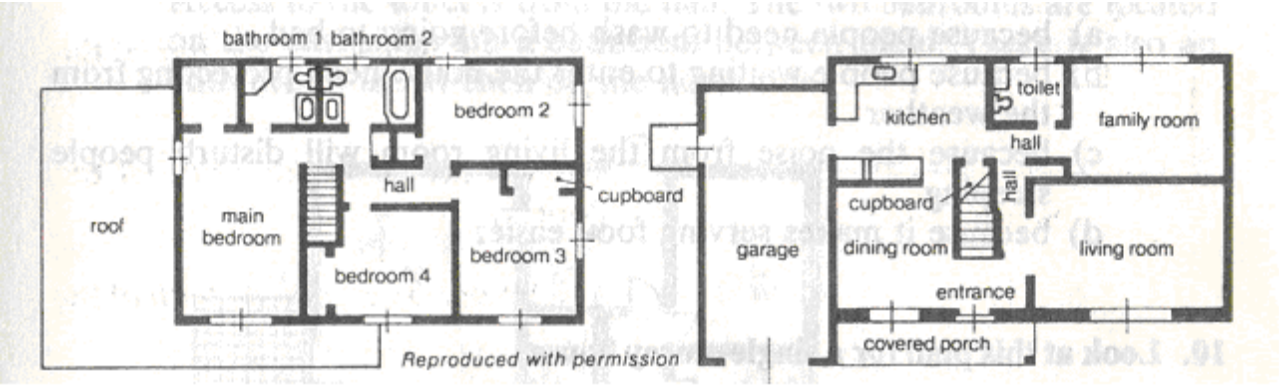
Utility room. — Equipment such as the heating plant and laundry tubs are in a small room (about 7 feet by 8 feet) called a utility room, near the kitchen on the ground level. Laundry equipment should be located with thought for efficiency and light, as some of the hardest work in the house is done in this room.

Bathroom.—Any present-day house has at least one bathroom. The three plumbing fixtures which an ordinary bathroom usually contains are the bathtub, the water closet, and the wash basin.

17. Finish these statements. Add some more information to them

1. Bedrooms should be…
2. It is necessary that…
3. Another requirement is…
4. There are three centres of activity in kitchens…
5. Dining room should be…
6. Living rooms are…
7. In living rooms often there are no…
8. In utility rooms there are…
9. The tree plumbing fixtures…

18. Study these plans of a two-storey house:



First floor plan Ground floor plan

Now say whether these statements are true or false. Correct the false statements.

a) The dining room is located under the main bedroom,
b) A hall is located in the centre of the first floor.
c) There are three adjacent bathrooms оп the first floor.
d) There is a toilet between the kitchen and the dining room.
e) Bedroom 2 is situated over the family room.
f) There is a cupboard under the stairs.
g) Bedrooms occupy most of the ground floor.
h) Viewed from the front, the dining room is оп the left of the entrance.
i) Viewed from the rear, the living тоот is behind the family room.
j) Entering the house from the garage, you pass through the living room to enter the family room.
k) The entrance is situated at the bottom of the stairs.
1) The kitchen and family room are located оп either side of the toilet.
m) A door in the garage leads to the kitchen.
8. Say where these rooms are in relation to each other:
a) kitchen - dining room
b) bathroom 1 - kitchen
c) cupboard - bedroom 2, bedroom 3

19. Write a composition "Architectural design ot a building» paying attention to orientation and surveying, styling, designing elevations and placement of different kinds of rooms of a house. Imagine that you present your diploma project and you are interested in getting award for your work

Практическое занятие №29.

Тема 29. SomeBasicProblemsinConstruction / 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.Researchn
научное исследование
2.Not to keep pace with, v
неотставатьот
3 .engineeringproblems, n
строительные проблемы
4.behaviorn
поведение
5. Serviceconditions, n
условияэксплуатации
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.precastadj сборный
14.prestressedadj преднапряженный
15.flexibility n гибкость
16. opportunity n возможность
17.investigationn исследование
18.conceptionn понимание, понятие
19. composite construction, n
составнаяконструкция
20. toreducev
уменьшать
21 .tohandlev доставлять
22.productivity-производительность
23. delivery n
поставка
24. working operations, n
производственныеоперации
25.supervisionn надзор
26.schedulenграфик
27.jobsite, n
строительная площадка
28. employmentnработа, занятость
29. indispensableadj необходимый
30. staffnштат, персонал
31. toassumev брать
32. function n функция

“Some Basic Problems in Construction”

However, civil engineering has solved many problems; problems demandingan engineering solution remain in construction.
The need for research. Without research, modern industry could not keeppace with the ever-changing demands for new materials, greater economy andfaster operations. It is research that has helped in the solution of many engineeringproblems. Only research gives the answers to the problem of behaviour ofstructures under service conditions and provides detail information for designpurposes.
Subjects for research in construction may include concrete cracks, the creep andshrinkage characteristics of concrete, deep foundations, methods of restressing,etc.
Site investigations are needed as a basis for the preparation of plans for agiven project. They provide the information for economical design of foundationsfor buildings.
Soil stabilization is also of great importance for engineers.
Building materials. Of the various structural materials concrete plain orreinforced, cast-in-place, precast or prestressed is the material most favored byarchitects and engineers for structures to show all the technical and economic advantages. They are: flexibility in design, speed of construction, structuralstrength.
New methods in prestressed concrete construction offer the greatest opportunitiesfor further investigation, new conceptions and new forms.
Composite construction. A popular and excellent form of construction isthat using a prestressed concrete unit combined with an in-situ top. By this meansthe 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 includeimportant areas of construction activity, the design of structures, the schedule ofdeliveries and the working operations, the supervision of work, the flow ofmaterials to job site and the skill of the workers.
The market for the services of the construction industry is widening. Theincreasing productivity lowers costs and provides for more employment forconstruction and working trades.
Specialists. Today the majority of construction firms have qualified andcompetent engineers on their staff if their operations are to be carried outefficiently and economically. Engineering operations are varied and extensive.
Men of all levels of training and competence may be required to performengineering activities. The work of a draftsman, a toolmaker, a plant operator isindispensable 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.

Вопросыизадания:

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

1. structural material
2. construction project
3. productivity
4. newmethods
5. opportunities
6. serviceconditions
7. economicadvantage

a. условияэксплуатации
b. новыеметоды
c. возможности
d. строительный объект
e. экономическое преимущество
f. конструкционные материалы
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. Темами 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.— Екатеринбур: 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.F., 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 №30.

Тема 30. Footing and foundations

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

Теоретическаячасть:

1.Find suitable meaning of English words. Explain them

isolated	fluid
footing	driver
combined	continuous
mat	плита, блеск
raft	пирамидальный
slab	неармированный
spread	недостаток
plain	паровой
cantilevel	объединенный
distributed	распределенный
floating	плавающий
stratum	несвязанный
scarcity	слой пласт
jet	ленточный
pile	сплошной фундамент
drop	свая, столб
steam	падающий
hammer	забивное устройство
watertight	основание, фундамент
exclude	исключать

консоль, кронштейн	молот
водонепроницаемый	струя воды
сплошной фундамент	жидкость

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

spread	footing
wall	foundation
continuous	pile
floating	driving
pile	
timber	

3. Read the text. Find words characterizing types of footing and foundations

Footing and foundations

The more common types of foundation structure are: isolated spread footings (one to each column); combined footings (one to two columns); and mat, or raft, foundations (all columns resting upon a heavy slab).

Spread footings may be used under either walls or columns and may be of timber, steel, plain masonry, or reinforced concrete.

Wall Footings.—The footings in this case act as a cantilever beam with the load acting upward and the support at the middle.

Continuous Footings under Columns.—When footings are built continuously under columns, the footing takes on the nature of a beam carrying concentrated loads at column points acting downwards and distributed load acting upward.

Floating Foundations is a term applied to practically monolithic footings built under an entire structure which have been used widely for construction on soils of more or less plastic nature. *Pile foundations* are used in the areas where the other kinds of foundations cannot be constructed. By driving bearing piles, the support of structure is transferred in an irregular manner to the earth stratum.

Timber piles.—Timber piles have been used almost exclusively in the past in foundation work; but with the growing scarcity of timber and the development of concrete, reinforced concrete piles are coming to be extensively used.

Pile driving.—Piles may be driven by means of a pile driver or a water jet. Pile drivers may be classed as drop hammers and steam hammers.

Caissons.—The word "caisson" is derived from the French word meaning "case". As applied to engineering construction, a caisson may be defined as a large watertight box used to exclude water or other fluid and semifluid material during excavating of foundations and the construction of substructures and ultimately becoming an integral part of the structure.

Tasks after reading:

4. Define which of these statements contain the main idea of the text. Prove your opinion

1. The more common types of foundation structure are spread, combined footings and raft foundation.
2. Footings and foundations may rest either on the bearing soil or on the heads of piling.

5. Put these sentences in order according to the context. Add some more necessary sentences

1. The support of structure is transferred in an irregular manner to the earth surface. 2. It may be defined as a large watertight box.3. They act as a cantilever beam.4. They may be driven by means of a pile driver or water jet.

6. Using information from the text and words from ex.1, 2 speak briefly about types of foundations

Практическое занятие №31.

Тема 31. Roofs: Types and Parts / Крыши: виды крыш и их части

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

Теоретическаячасть:

7.Find suitable meaning of Russian words. Explain them in English

навес	
скат	topmost
огороженный	enclosed
расположенный впритык	inclination
выскакивать	steeply-pitched
наклон, уклон	span
контрфорс, упор	pitch
наивысший верхний	governed
крутой скат	milder
строительная крыша с затяжкой	lean-to
односкатный	shed
стропило	slope
балка, перекладина	rafter
скат, уклон	butting
позволять	ridge piece
ригель	abutment
регулироваться	afford
придавать жесткость	couple-close
умереннее	thrust out
прогон, обрешетка	joist
пролет	collar
брус	scantling

purlin stiffen

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

lean –to	roof
shed	
couple	
couple-close	
collar	
double rafter	
purlin	
steeply-pitched	
flat	

9. Read the text. Find words characterizing types of roofs

Roof

A roof is the topmost part of a building. It is a covering 'constructed over the enclosed space to keep out rain and wind and to preserve the interior from exposure to weather. A roof must be well framed, strong enough to resist winds and sustain snow loads, and serve as insulation to prevent transmission of heat. They should tie the walls and give strength and firmness to the structure.

Roofs are now built varying in inclination from the nearly horizontal to the steeply-pitched. The flat roofs are often used in buildings of cities not only as coverings but for play-grounds, tea-gardens, and such purposes, but in buildings where slates, tiles or stone slabs form the roof covering, the pitch should never be less than one-fourth of the span.

For utilitarian purposes, the inclination of the roof is made as flat as possible for the purpose of economising the timber and covering material.

The pitch of roof is governed, first by climatic conditions, secondly by the covering material used and by architectural requirements. For any given covering the milder the climate the flatter the pitch that may be given to the roof.

There are numerous forms among the wooden roofs, namely:

Lean-to or shed roofs are roofs formed with one slope only, and used for outhouses and for sheds.

Couple roofs are roofs composed of rafters with their feet fixed to wall plates, with their heads butting against a ridge piece; there is no tie, they depend for their stability upon the abutment afforded by the walls.

Couple-close roofs- for roofs about 12 feet in span;ties are used to prevent the walls being thrust out by the rafters. The ties are usually formed by fixing the ends of the ceiling joists to the feet of the rafters.

Collar roofs-in this type each pair of rafters has a collar ,a scanting similar to the rafters fixed abouthalf-way up the slope of the rafters. This tends to prevent the spread of the rafters, but it also subjects the rafters to considereable bending stress, which is at a maximum at the point where the collar is attached to the rafter.

Double rafter or Purlin roofs-Where the rafters exceed 8 feet in length it is more economical to introduce purlins than to employ scantling of an area greater than2 in 4 in.The purlins lie together and greatly stiffen the rafters.

Tasks after reading:

10. Choose correct titles to paragraphs. Add necessary sentences. Put them in order

1. Conditions and requirements for type of roof's pitch.2. Characteristics of roofs. 3. This type is formed with one slope. 4.This tends to prevent the spread of the rafters.5. Purpurse of the inclination.

11. Finish these statements choosing the correct variant. Prove your opinion

1. A roof is constructed over the enclosed space…
a) to be well framed
b) to be built varying in inclination
c) to give strength to the structure.
2. The flat roofs are often used…
a) for covering
b) for leasure
c) to be less than span
3. The inclination of the roof is made…
a) less than 1/4 of the span b)the pitch c)flat to economize materials.
4. Shed roofs are formed…
a) with one slope b)12 feet in span c)to introduce purlines
5. Couple roofs are composed…
a) depending for stability upon the abutment
b) by fixing the ends of the ceiling
c) for outhouses
6. Collar roofs…
a) exeed 8 feet in length b)prevent the spread of the rafter c)fix their feet to wall plates
7. Couple-close roofs are used…
a)to considerable bending stress b)to stiffen the rafters
c) to prevent thrusting out walls
8. Purlin roofs
a) stiffen the rafters b)butt against a ridge piece c) do not tie

12. Using information from the previous ex. speak briefly about all types of roofs.

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
Теоретическаячасть:

Define correct translation to English words. Explain their meaning

obligue	давление, упор
thrust	удерживающий
solid	саман
hollow	случайный
girder	пустой, полый
truss	прежде упомянутый
partition	блочная кладка
retaining	кладка из облицовочного камня
foregoing	обработанный
cane	окалывающий
adobe	пустотный
rubble	наклонный косой
block in course	прут, стержень
ashlar	сплошной, твердый
thinly-beded	распиленный
random	перегородка
scabbling	бутовая (каменная) кладка
sawn	штукатурка
wrought	ригель, балка
rod	тонкослоистый
woven wire	сварочный
shear	поперечная сила
cavity	ячейка
cubicle	ферма, рама
sawdust	древесно-волокнистый
plaster	тростник
wood wool	витая проволка
dressed	древесные опилки

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

obligue	wall
solid	material
hollow	stone
foregoing	thrust
rubble	hammer
block in course	brick work
ashlar	concrete
thinly-bedded	
scabbling	
reinforced	
cavity	
partinion	
sawdust	
wood-wool	
asbestos	

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 raftered 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 bl.ocks 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 devision 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 strengthen 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 incourse 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

Практическое занятие №33.

Тема 33. Walls / Виды стен. Walls Strength /Мощность стен.

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

Теоретическаячасть:

Walls

A wall is a continuous, usually vertical structure, which is thin relative to its length and height. External walls help to provide shelter from our environment and internal walls divide buildings into rooms or compartments. The main function of an external wall is to provide shelter against wind, rain and the daily and seasonal variations of outside temperature normal to its location, for reasonable indoor comfort. To provide adequate shelter a wall should have sufficient strength and stability to be self-supporting and also to support roofs and upper floors. The terms loadbearing and non-loadbearing are used to differentiate the structural requirements of those walls that carry the loads from roofs and upper floors in addition to their own weight from those that are freestanding and carry only their own weight. The majority of walls for single, double and triple storey buildings are constructed with loadbearing masonry walls or are framed from timber, steel or concrete. The type of wall used will generally depend on the availability of materials and labour, economic factors and the design approach. The function of a wall is to enclose and protect a building or to divide space within a building. It is convenient to adopt a list of specific requirements to provide a check that a particular wall construction satisfies these requirements.

Вопросы и задания:

Задание1.Переведитенарусскийязыкивыучитеследующиеслова: continuous, vertical, thin, length, height, external, internal, environment, to divide, indoor, adequate, sufficient, self-supporting, requirement, enclose, resistance, carry, security, loadbearing, non-loadbearing

Задание 2. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний.

1 divide.	a. Надежность
2. sufficient	b. ограждать
3. continuous	c. домашний
4. self-supporting	d. делить, разделять
5. indoor	e. окружающая среда
6. requirement	f. внутренний
7. height	g. соответствующий
8. enclose	h. внешний
9. security	i. самонесущие
10. environment	j. достаточный
11. adequate	k. выдерживать, нести

Задание 3. Составьте предложения из двух, подходящих по смыслу частей и переведите предложения на русский язык.

1. The type of wall used will generally	a. to divide space within a building.
2. Internal walls divide buildings	b. are constructed with loadbearing masonry walls or are framed from timber, steel or concrete.
3. The terms loadbearing and nonloadbearing are used	c. to enclose and protect a building.
4. A wall is a continuous, usually vertical structure, which is	d. against wind, rain and the daily and seasonal variations of outside temperature normal to its location.
5. The function of a wall is	e. to provide shelter from our environment
6. It is convenient to adopt a list of specific requirements	g. Resistance to weather and ground moisture, resistance to airborne and impact sound.

Задание 4. Замените данные в скобках слова и словосочетания на русском языке их английскими эквивалентами и переведите предложения на русский язык.

1. The terms (несущие) and (ненесущие) are used to differentiate the structural requirements of walls.

2. The main function of an external wall (состоитвтом, чтобыобеспечить) shelter against wind, rain and the daily and seasonal variations of outside temperature normal to its location, for reasonable indoor comfort.
3. A wall is a (непрерывная), usually (вертикальная) structure, which is thin relative to its length and height.
4. To provide adequate shelter a wall should have (достаточнуюпрочностьиустойчивость).
5. (Внешниестены) help to provide shelter from our environment.
6. (Внутренниестены) divide buildings into rooms or compartments.
7. (Удобно) to adopt a list of specific requirements to provide a check.
8. A wall should be (самонесущей) and also support roofs and upper floors.
9. (Используемыйтипстены) will generally depend on the availability of materials and labour, economic factors and the design approach

Задание 5. Переведите текст на русский язык письменно со словарем.
Walls Strength
The strength of the materials used in wall construction is determined by the strength of a material in resisting compressive and tensile stress and the way in which the materials are put together. The usual method of determining the compressive and tensile strengths of a material is to subject samples of the material to tests to assess the ultimate compressive and tensile stresses at which the material fails in compression and in tension. From these tests the safe working strengths of materials in compression and in tension are set. The safe working strength of a material is considerably less than the ultimate strength, to provide a safety factor against variations in the strength of materials and their behaviour under stress. The characteristic working strengths of materials, to an extent, determine their use in the construction of buildings. The moderate compressive and tensile strength of timber members has long been used to construct a frame of walls, floors and roofs for houses. The compressive strength of well burned brick combined with the durability, fire resistance and appearance of the material commends it as a walling material. The sense of solidity and permanence and the compressive strength of stone made it the traditional walling material for many larger buildings. Steel and concrete are used principally for their considerable strength as the structural frame members of large buildings. In the majority of small buildings, such as houses, the compressive strength of brick and stone is rarely fully utilized because the functional requirements of stability and exclusion of weather dictate a thickness of wall in excess of that required for strength alone.

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.— Екатеринбур: 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.F., 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 №34.

Тема 34. Floors / Напольные покрытия.

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

Теоретическаячасть:

19. Find correct translation to Russian words. Explain their meaning in English

водонепроницаемый	single-joisted
боковой	double-joisted
хомут, затяжка	bridging
балка, стропило	binder
запас, допуск	rot
движение воздуха	precaution
достигать	attain
угол	comply
перекрытие по балкам, являющимся заполнением между прогонами	inch
	gauge

ребро	grade
однобалочная система перекрытий	angle
дюйм	lateral
плита	combustible
крепить	rolled
керамика	boring
двойная система перекрытий	joist
сортировать	brandering
сборный	perforated brick
делать паз, желобить	provision
перекладина, укрепление затяжками	draught
выступ, гнездо для соединения	filler joists
предосторожность	slab
горючий, воспламеняющийся	rib
сверление	cleat
многодырчатый кирпич	earthen ware
соответствовать	precast
решетка	grooved
затворять (раствор)	joggle
гнить	screed
выравнить	damp proof
прокатный	

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

single-joisted	joists
double-joisted	supported
triple-joisted	floor
single	brick

basement wood	slab
bridging	beam
binders	
perforated	
filler	
fire-resisting	
ferro-concrete	
hollow	
precast	

21. Read the text. Find synonyms characterizing all kinds of floors

Floors

Definition.—The tiers or levels which divide a building into stages or stories are called floors. These may be of timber, or they may be constructed of fire-resisting materials.

Classification.—Floors for ordinary residential purposes are mostly made of timber, and may be divided into:

Single-joisted floors include bridging joists.

Double-joisted floors include bridging joists supported by binders.

Triple-joisted floors include bridging joists supported by binders the latter usually being framed into girders which finally support the load.

Single Floors.—When the total weight upon a floor is carried by a single system of joists, which span or bridge an opening, it is termed a single floor, and the joists are known as bridging joists.

Basement Wood Floors.—Basement floors constructed of timber are subject to rot unless adequate precautions are taken to keep the woodwork dry and well ventilated. To attain the latter conditions and also to comply with general hygienic requirements, the soil below the basement floor should be covered with 6 inches of good concrete, gauged and graded to be practically damp proof. A composition of 1 part Portland cement,2 parts sand and 4 parts broken ballest will give good results and keep down dampness when not under pressure and also ground air.

Double Floors.—Where the smallest span exceeds I5"feei it becomes economical and better construction to employ double floors. These consist of girders usually placed across the shortest span, and joists crossing them at right angles and fixed in the direction of the longest span.

Triple-joisted Floors.—For spaces of 25 feet and over in timbers, the main girders require lateral support. Intermediate beams known as binders are framed into the main girders, and these in turn support the bridging joists. Large wood floors of this type are now obsolete, owing to the difficulty in obtaining timbers sufficiently large for the main girders and also from the combustible nature of the material. Where floors of this type are employed, the main girders would always be of steel, either simple rolled beams or compounds, according to the nature of the loads to be supported. The proper necessary ventilation may be obtained by the insertion of iron or terracotta air bricks at intervals in the outer walls between the ceiling and the floor boards level, and by boring a number of horizontal holes through the joists at the centre of their depth, by using ceiling joists, or by brandering, so that .the air may circulate through all. The ventilation is more complete, when, instead of a few iron or air bricks, a course of perforated bricks is inserted at two or more sides of the floor, and provision is made for a thorough ventilation without draught.

Fire-resisting Floors.—The practice of employing a system of fire-resisting construction for floors in all cases where it is not imperative to reduce the initial cost to the lowest point is now becoming universal. Some of advantages of this form of construction are safety from fire, its superior hygienic properties, and ease with which floors of wide spans may be constructed thus enabling any storey to be divided into rooms, without reference to the arrangement of the rooms either above or below.

Upper Floors.—There are a large number of patents for the construction of upper floors, but they nearly all conform to one of four types, i. e., 1) filler joists, 2) ferro-concrete slabs, 3) hollow block and rib, and 4) precast beams, each of which is a method designed to support the essential concrete slab.

Filler Joist Floor s.—In this type of floor the concrete slab is reinforced with rolled steel joists of small section, spaced at from 2 feet to 3 feet centres and in spans up to 20 feet. The filler joists may rest on brick walls or cleated to main steel girders.

Ferro Slab Floor s.—The floor surfaces in this type are formed of concrete reinforced with steel rods spaced at about 6 inch centres. The minimum thickness permitted for floors is 3 inches, but generally they run aboutinch in thickness for every foot of span.

Hollow Block Floors.—These are formed of hollow earthenware or terra-cotta blocks from 9 inches to 1 foot in width, about 1 foot in length, and of a depth varying from 6 inches to 1 foot. They are laid in parallel rows on the formwork, their ends butted, and with a space between them of from 4 inches to 6 inches wide.

Precast Beam Floor s.—These consist of hollow precast reinforced beams of about 10 inches in width, and a depth varying to the requirements of the load and span. They may be supported direct upon walls or be placed between steel joists. The sides are grooved to form joggles. The beams are precast, and seasoned before delivery, and can be lifted and bedded in position directly, and the surface concrete screeded on direct.

Tasks after reading:

22. Finish these sentences using the text. Add some more information

1. Floors are called…
2. They may be constructed from...
3. Floors are divided into…
4. Single floors are termed…
5. Basement wood floors are constructed…
6. Double floors consist of …
7. Triple-joisted used for…
8. Ventilation of floors may be obtained by…
9. Advantages of fire-resisting floors are…
10. Upper floors are divided into…
11. Filler joist floors are reinforced with…
12. Ferro slab floors are formed of…
13. Hollow block floors are formed of…
14. Precast beam floors consist of …

23. Explain main differences between

1)single, double and triple floors
2) basement and upper floors
3) filler joist, ferro slab, hollow block, precast beam, floors.

Discuss this information with your groupmates

24. Fill the table "Parts of a building" paying attention to the classification of each part

Footings	Roofs	Walls	Floors

25. Write down a report about one of the parts of a building using information from the table.Note all peculiarities characterizing it beginning from necessarybuilding materials, requirements for erection and functions in a building

26. Compose a dialogue for four persons "Parts of a building" with the help of your report and a table

Практическое занятие №35.

Тема 35. Floors / Напольные покрытия.

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

Теоретическаячасть:

Текст.

Floors Concrete and timber are the two materials most used for the construction of ground and upper floors. The choice of one over another is determined largely by the span required performance in terms of fire safety and the resistance to the passage of heat and sound. The functional requirements of a floor are: 1. Strength and stability. 2. Resistance to weather and ground moisture. 3. Durability and freedom from maintenance. 4. Fire safety – resisting spread and passage of fire. 5. Fire safety – providing stable support for occupants to evacuate. 6. Resistance to passage of heat. 7. Resistance to the passage of sound. The strength of a floor depends on the characteristics of the materials used for the structure of the floor, such as timber, steel or concrete. The floor structure must be strong enough to support safely the dead load of the floor and its finishes, fixtures, partitions and services and the imposed loads of the occupants and their movable furniture and equipment. Where imposed loads are small, as in single family domestic buildings of not more than three storeys, a timber floor construction is usual. The lightweight timber floor structure is adequate for the small loads over small spans. Precast concrete block and beam flooring offers an economical and quick alternative to timber floors. For larger imposed loads and wider spans a reinforced concrete floor is used, both for strength in support and for resistance to fire.

Вопросыизадания:

Задание 1. Переведитенарусскийязыкивыучитеследующиеслова: floor, concrete, timber, choice, determine, span, require, performance, safety, resistance, heat, sound, strength, durability, maintenance, moisture, occupant, fixture, partition, services, equipment, storey, lightweight, precast, precast concrete block, both … and

Задание 2. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний.

1. floora. пролет
2. maintenanceb. легкий
3. moisture c. коммуникации, инженерные сети
4. lightweight d. пол, этаж, перекрытие
5. precast concrete block e. характеристика, работа
6. services f. прочность
7. performanceg. Оборудование
8. fixtureh. ремонт, тех. обслуживантие
9. span i. многоквартирный дом из сборного бетона
10. heat j. арматура, зажимное приспособление
11. equipment k. долговечность

Задание 3. Составьте предложения из двух, подходящих по смыслу частей и переведите предложения на русский язык.

1. The strength of a floor depends on the
characteristics of the materials

a. the dead load of the floor and its finishes, fixtures, partitions and services and the	imposed loads of the occupants and their movable furniture and equipment.
2. Precast concrete block and beam flooring offers	b. strength and stability, durability and freedom from maintenance.
3. For larger imposed loads and wider spans a reinforced concrete floor is used,	c. the small loads over small spans.
4. Where imposed loads are small, a timber floor construction	d. both for strength in support and also for resistance to fire.
5. The floor structure must be strong enough to support safely	e. by the span required performance in terms of fire safety and the resistance to the passage of heat and sound.
6. Concrete and timber are	f. used for the structure of the floor, such as timber, steel or concrete.
7. The functional requirements of a floor are:	g. the two materials most used for the construction of ground and upper floors.
8. The choice of one over another is determined largely	h. is usual.
9. The lightweight timber floor structure is adequate for	i. an economical and quick alternative to timber floors.

Задание 4. Замените данные в скобках слова и словосочетания на русском языке их английскими эквивалентами и переведите предложения на русский язык.

1. The floor structure (должна быть достаточно прочной, чтобы выдерживать) safely different loads.
2. The lightweight timber floor structure (соответствует) for the small loads over small spans.
3. For larger imposed loads and wider spans a reinforced concrete floor is used, (как) for strength in support (таки) for resistance to fire.
4. Concrete and timber are the two materials (наиболееширокоиспользуемые) for the construction of ground and upper floors.
5. (Там, гдеприложенныенагрузкинебольшие), a timber floor construction is usual.
6. The choice of one over another is determined largely by the span required performance (сточкизрения) fire safety and the resistance to the passage of heat and sound.
7. (Прочностьперекрытия) depends on the characteristics of the materials used for the structure of the floor. Задание

Задание 5. Переведите текст следующий текст на русский язык письменно со словарем.

Roofs

The roof is an important element in providing protection from the weather. It has a significant role to play in the reduction of heat loss from a building. Roofs are classified as either pitched or flat. Timber is the most commonly used material. Concrete is sometimes used for flat roofs. It is common practice to construct pitched roofs from prefabricated timber trusses. The functional requirements of a roof are: 1. Strength 2. Stability 3. Resistance to weather 4. Durability and freedom from maintenance 5. Fire safety 6. Resistance to the passage of heat 7. Resistance to the passage of sound 8. Security 9. Aesthetics The strength and stability of a roof depends on the characteristics of the materials from which it is constructed and the way in which the materials are formed as a horizontal (flat) platform or as a triangular (pitched) framework. A roof prevents water entering a building by using a roof covering which prevents rain penetration. The materials that cover the roof range from the continuous impermeable layer of asphalt that can be laid horizontal to exclude rain, to the small units of clay or concrete tiles that are laid overlapping or interlocking so that rain runs off the roof to rainwater gutters. The durability of a roof depends on the ability of the roof covering to exclude rain, snow and the destructive action of frost and temperature fluctuations. Persistent penetration of water into the roof structure may cause or encourage decay of timber, corrosion of steel or disintegration of concrete.

Задание 6. Переведитенарусскийязыкивыучитеследующиеслова: roof, heat, protection, reduction, pitched, flat, truss, repair, sound, framework, prevent, penetration, impermeable, layer, cause, decay, corrosion, disintegration

Задание 7. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний.

1. prevent a. Каркас
2. truss b. покатый
3. reduction c. гнить
4. penetration d. разрушение
5. flat e. препятствовать, предотвращать
6. layer f. ферма
7. decay g. непроницаемый
8. pitched h. сокращение, уменьшение
9. framework i. плоский
10. disintegration j. вызывать, причина
11. impermeable k. слой

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.

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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.— Екатеринбур: 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.F., 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

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РАЗДЕЛ. MIXING, MOLDINGANDCURINGEQUIPMENT /Оборудование для смешивания, формования и отверждения строительных смесей

Практическое занятие №36.

Тема 36. OnMixing, MoldingandCuringEquipment/ Об оборудовании для смешивания, формования и отверждения строительных смесей.

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

Теоретическаячасть:

On Mixing, Molding and Curing Equipment

(1) Mixers are the most important item of the precastconcrete products industries. Although both batch and continuous mixers are used, the former are in far more general use. A given charge of materials is placed in the batch mixer, mixed and discharged before the next lot of materials is added. Batch mixers are manufactured in a wide range of sizes, and with various combinations of mechanical features. The desirability of extremely strong construction is a good point to keep in mind when selecting a mixer, for a light machine,

even though it may be adequate for the mixing job, may prove to be highly vulnerable when some foreign object is by chance introduced. Replaceability of parts subject to wear is another vitally important factor to be considered.

(2) In continuous mixers, the proportioned materials areintroduced at intervals, and the mixing goes on continuously during the passage of the materials through the machine. Maintenance of strict uniformity with continuous mixers is somewhat more difficult than with batch machines, and they are for this reason considered to be better suited to very large operations.

(3) Molding of precast plain and reinforced-concrete units is usually accomplished with the aid of vibration. Precast reinforced-concrete pipes are manufactured either by vibrating or by centrifugal process. When reinforced-concrete pipes are to be used in pressure lines the requisite impermeability, density and strength are best obtained by centrifugal casting. Pipes from 12 to 78 inches in diameter and from 8 to12 feet long are made by this process. When the required amount of concrete has been placed into the mould, the latter is rotated at high speed to remove all excess mixing water.

(4) Concrete sets in the presence of moisture and heat. Chemical reactions stop almost completely when the temperature drops below 40 degrees F., and the lack of moisture during the setting period results in incomplete hydration of the available cement. Under either of these conditions precast reinforced-concrete units fail to develop more than a fraction of the strength potentially available in the material. Obviously, then, the maintenance of favorable curing conditions is of prime importance. Although 28-day air curing and drying under cover seems to offer a fair solution to the problem, itcreates,especially in high-production plants, some almost equally serious problems, by tying up large amounts of capital in equipment, and because of relatively large storage areas required.That is why high-pressure steam curing is verywidely used now.

(5) Although the equipment is more expensive, curing with high-pressure steam is perhaps the most advanced practical form of concrete curing. It reduces the curing period from days to hours, allowing the precast reinforced concrete elements to be delivered to the construction job as early as 15 or 16 hr after they are moulded.

(6) Cylindrical steel autoclaves are employed in thisprocess. The freshly-made units are wheeled into the autoclaves, tightly closed there, and steam at 120 lb per sq. in. gage pressure or more is turned on, the temperature insidereaching 350 to 360 deg. F in about 3 hr. After 7 to 8 hr. ofcuring the steam is turned off and the pressure is rapidly lowered during a 1/2 hr. period to atmospheric pressure afterwhichthe units are removed. In general units

Tasks after reading:

cured in this manner will have strength at least equivalent to that, obtained by 28 days of continuous moist curing at 70-80 deg. F.

4. Compose pairs of English and Russian terms

mixing water	1. условиявызреваниябетона
high-pressuresteamcuring	2.схватываться
mixer.	3. складские площади
toset	4.твердение при влажном режиме
molding	5. бетономешалка
curingconditions	6. вода затворения
impermeability	7. формовка
aircuring	8. неармированный бетон
storageareas	9. заменяемость
moistcuring	10.водонепроницаемость
	11.обработка (бетона) паром высокого давления

12.вызревание (бетона) на воздухе

5. ***Composewordcombinations. Makeyourown sentences on the topic of the text***

batch	1. process
replace ability	2. of cement
maintenance	3. concrete
centrifugal	4. mixer
mixing	5. curing
setting	6. water
hydration	7. site
steam	8. autoclave
construction	9. of parts
cylindrical	10. of uniformity
plain	11. period

6. ***Define what parts of the text do these titles belong to. Using these points speak briefly about Mixing, Moulding and Curing Equipment***

1. Manufacture of concrete either by vibration or centrifugal process. 2. Differences between using of continuous and batch mixers. 3. The most advanced practical form of concrete curing. 4. Concrete curing is reduced in autoclaves. 5. Necessary conditions for concrete setting.

7. Answer to these questions

1. What kind of mixers is in for more general use and why?
2. Explain the principle of batch mixer's work.
3. Why is continuous mixer used mostly in very large operations?
4. Molding of what kind of building units is accomplished with the help of vibration and with centrifugal process? Why?
5. What happens with concrete in the mould?
6. What conditions are necessary for manufacture of concrete?
7. What difficulties are happened to be in this process?
8. How is it possible to reduce the concrete curing period?

Explain the principle of cylindrical steel autoclaves

Практическое занятие №37.

Тема 37. Earth-MovingMachinery/Техника для земляных работ

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

Теоретическаячасть:

Earth-Moving Machinery

(1) The annual amount of mechanized earth digging operations in Russia comes up to thousands of millions of cubic meters. It requires the employment of a great plant of powerful earth-moving machines, the excavators being the most important of them.

(2) It is not possible to start on a construction job without a good deal of preliminary leveling the site. To carry out this work one must employ the earth-moving equipment.

(3) Site preparation and excavation are the most fully mechanized of all the operations in building construction. Most excavating machinery is heavy and slow-moving and must be carried from site to site on special transporters. It is clear that the use of expensive mechanical plant requires careful planning and efficient site organization if full advantage is to be taken of its high rate of production.

(4) Plant for site preparation and excavation can be divided into four classes. First, machines which plane off a thin layer of soil and push it in front of them. Second, machines which plane off a thin layer of soil, at the same time picking it up and carrying it where required. Third, machines which dig out soil by some form of a bucket, and load it for transportation into separate vehicles. Forth, machines designed specially for trenching by means of a number of buckets mounted either on a continuous chain or on a wheel.

(5) In the first class are bulldozers of different types. A bulldozer represents by itself an earth-moving machine which carries out its work with the aid of a blade mounted on a tractor of either crawler or wheel type.

(6) A scraper, which belongs to the second class of earthmoving machines, is simply a large box with an open mouth, dragged along the surface of the ground until it is full. It has a cutting edge that digs. There is a considerable variety of the scrapers, from small units to huge ones made to accommodate 30 cubic yards of soil and to absorb the power of two tractors while at work.

(7) Revolving shovels, which belong to the third class of earth-moving machines, made their first appearance in 1835 in the form of a part-swing shovel mounted on railroad tracks. It was powered by steam, it was slow and clumsy, but it did the work. Into Great Britain they were introduced from America in 1887 to work on the Manchester Ship Canal. They were a source of wonderment to the people of that part of the country and trips were organized to provide a view of the "American Devils" as they were popularly called.

Tasks after reading:

11. ***Compose pairs of English and Russian terms***

plant	1. ковш
leveling	2. отвал, нож
excavation	3. сострогивать, сниматьслой
bucket	4. механическое оборудование
trenching	5. ротор, колесо
blade	6. скрепер
shovel	7. прямая лопата

topower	8. планировка, планировочные работы
toplaneoff	9. приводить в действие
wheel	10. земляные работы
	11. рытье траншей
	12. транспортер

12. Compose word combinations. Made your own sentences on the topic of the text

earth-moving	tractor
excavating	shovel
site	equipment
continuous	plant
crawler	preparation
pneumatic	edge
cutting	tracks
revolving	machinery
railroad	chain
mechanical	tyre

13*. Find synonyms. Explain a bit difference in each pair*

annual	1. to reach
amount	2.to fulfill
to come up to	3.work
to require	4.to have room for
job	5. year
preliminary	6. to demand
to carry out	7. not small
to excavate	8. quantity
continuous	9. to dig
considerable	10.preparatory
huge	11. enormous
accommodate	12. endless

14. Find correct and incorrect statements. Add some more information from the text

1. On large construction sites where a considerable volume of concrete is required a central mixing plant is generally used. 2. A bulldozer is an earth-moving machine which planes off a thin layer of soil, picks it up, and carries it where required. 3. The tower cranes are employed for lifting materials and structural elements onto the buildings being erected. 4. The first revolving shovels were mounted on railway tracks and powered by steam. 5. Site preparation and excavation are operations which are usually carried out with manpower. 6. A scraper is simply a large box fitted with a cutting edge that digs. 7. Since excavators are heavy and slow-moving machines, they are carried from site to site on special transporters.

Практическое занятие №38.

Тема 38. Cranes/Краны

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

Теоретическаячасть:

Cranes

(1) The function of a crane is to hoist or lower a load suspended from its jib. Various types of cranes are available, the type and size best suited for a specific operation being influenced by the following factors: 1. The nature of the work on which it is to operate. 2. The weight of load it has to handle.

(2) **Mobile Cranes.** Mobile cranes have a wide range of uses on building and civil engineering works of construction. Cranes of this type usually take the form of a frame carrying a jib, a winch, and other necessary hoisting and controlling equipment, the whole being mounted on a cast-iron bed plate fitted with road wheels of the pneumatic type. One may also have them mounted on caterpillar tracks or on a lorry chassis if desired.

(3) **Tower Cranes.** Tower cranes are of predominant use in construction' practice. They are employed for lifting materials, parts and whole structures onto the buildings being erected, for the installation of separate elements and for loading and unloading operations.

(4) A tower crane consists essentially of a support, a tower, a revolving structure, a boom, a counterweight, and controls.

(5) The operating members consist of the boom, a hoisting pulley and a load handling attachment, usually a hook. The counterweight compensates for the weight of the boom and part of the weight of the load being lifted by the crane.

(6) As to the design, the tower cranes are subdivided into two main groups. The first group includes cranes with the turntable and the counterweight mounted at the top of thestationary tower. Some cranes of this type have a trolley travelling along the boom which makes it much easier to set structural elements precisely in the required place.

(7) **The Climbing Crane.** The climbing crane has been developed to meet the demands for a crane capable of working on buildings taller than can be accommodated by rail-mounted tower cranes. It is also intended for use where restricted site conditions make track laying and consequently the use of a rail-mounted tower crane impracticable. Principal advantages of this crane are:

(8) 1) Lightness and ease of operation. 2) No real limitation to the height of the building upon which it can work. It can be used on buildings up to approximately 420 ft. high. 3) The crane climbs as the construction work progresses. 4) It can be employed on the site from the beginning of the construction, since with a suitable foundation block it will stand and work until the building progresses far enough for the crane to stand on the first floor. All the operations including the erection and climbing and dismantling are power-driven.

Tasks after reading:

18. Compose pairs of Russian and English terms. Make your own sentences on the topic of the text

подъемно-контрольное оборудование
грузовое шасси
установка отдельных элементов
каркас, несущий нагрузку стрелы крана
погрузочные и разгрузочные операции
подъемный ролик
установленный на верху стационарного крана
приспособление для подвешивания груза
груз, подвешенный к стреле крана
вращающееся сооружение
установленный на чугунной плоской платформе
механизированные монтаж, подъем грузов демонтаж
оборудованный дорожными колесами пневматического типа
преобладающее использование
тележка крана, двигающаяся вдоль стрелы крана
башенные краны, установленные на рельсы
соответствовать требованиям, предъявляемым к кранам
гусеничные треки
большое разнообразие в использовании

a load suspended from jib
a wide range of uses
a frame carrying a jib
hoisting and controlling equipment
mounted on a cast-iron bed plate
fitted with road wheels of the pneumatic types
caterpillar tracks
lorry chassis
predominant use
installation of separate elements
loading and unloading operations
revolving structure
hoisting pulley
load handling attachment
mounted at the top of the stationary crane
trolley traveling along the boom
to meet the demands for a crane
rail-mounted tower cranes
erection, climbing, dismantling to be power driven

19.Find synonyms in the text, explain their differences and common features

20.Compare mobile, tower and climbing cranes, find their advantages and disadvantages due to certain conditions of building

21.Which of these statements are correct and which ones are incorrect. Prove your opinion

1.The function of a crane is to mount on caterpillar tracks.
2. Mobile cranes take the form of a revolving structure
3. Tower cranes are employed for installation of separate elements
4. The counterweight compensates a trolley travelling along the boom.
5. Climbing cranes are intended for use of a rail-mounted tower crane.
6.Their advantages are : lightness of operation, unlimitation of height of a building, crane climbing, using for all operations.

22.Using material from all texts define kind of building equipment to these word combinations. Fill the table

Name of building equipment										
Definition										

The presence of moisture and heat, gage pressure, a given charge of materials, to plane off a thin layer of soil, to dragge along the surface of the ground, the desirability of extremely strong construction, to reduce the curing period, a fraction of the strength potentially available, a part-swing shovel mounted on railroad tracks, preliminary leveling the site, to pick a layer of soil up, to be highly vulnerable, to introduce at intervals, to rotate at high speed, incomplete hydration, curing and drying under cover, high-pressure steam, to dig out soil, to trench by a bucket, a blade mounted on a tractor, a cutting edge, to push a layer of soil, to carry a layer of soil where required, to be wheeled into the autoclaves, atmospheric pressure.

23. Compose a dialog on the material of your table between a constructor, a supplier of building equipment, an engineer about preparing works and working of the building machinery on the building site and house – building plants

24. Compose a dialog for three or four persons on the topic "Process of erection of any structure" including excavation, concrete curing, climbing with the help of all kinds of building equipment

25. Write a report about one of the type of building machineries and its role in fulfillment of your project

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

Практическое занятие №39.
Тема 39. TheBasicProblemsofaBuildingMaterial'sIndustry / 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,– 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 -огромныегрузы, 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.— Екатеринбур: 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.F., Яськова В.Л. Английский язык для строителей. Практикум / Серия«Высшее профессиональное образование».—Ростов н/Д:Феникс, 2004. — 352 с.

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- http://www.biblioclub.ru
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Практическое занятие №40.

Тема 40. ModernBuildingMaterials/ Современные строительные материалы.

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

Теоретическаячасть:

Modern Building Materials I

Some of the most important building materials are: timber, brick, stone, concrete, metal, plastics and glass.

Timber is provided by different kinds of trees. Timbers used for building purposes are divided into two groups called softwoods and hardwoods. Timber is at present not so much used in building construction, as in railway engineering, in mining and in the chemical industry where it provides a number of valuable materials.

However, timber is still employed as a building material in the form of boards. For the interior of buildings plywood and veneer serve a number of purposes.

A brick is best described as a "building unit". It may be made of clay by moulding and baking in kilns, of concrete, of mortar or of a composition of sawdust and other materials. In shape it is a rectangular solid and its weight is from 6 V_2 to 9 lb.

There exists variety of bricks for different purposes: ordinary, hollow or porous, lightweight, multicolor bricks for decorative purposes, etc. Bricks are usually laid in place with the help of mortar.

The shape and convenient size of brick enables a man to grip it with an easy confidence and, because of this, brick building has been popular for many hundreds of years. The hand of the average man is large enough to take a brick and he is able to handle more than 500 bricks in an eight-hour working day.It is necessary, therefore, for the "would be" bricklayer to practise handling a brick until he can control it with complete mastery and until he is able to place it into any desired position.

The brick may be securely handled by placing the hand over the surface of the upper part of a brick and by placing the thumb centrally down the face of the brick with *the first joints of the fingers[1] on the opposite face. It is better to protect the thumb and the fingers with leather pads, which also prevent the skin from rough bricks.

Sometimes natural stones such as marble, granite, basalt, limestone and sandstone are used for the construction of dams and foundations. Marble, granite and sandstone are widely used for decorative purposes as well, especially with the public buildings.

Natural stone is used for foundations and for the construction of dams. The main varieties of building stone are basalt, granite, marble, sandstone and limestone.

Metals: Aluminium, principally in the form of various alloys, is highly valued for its durability and especially for its light weight, while *brass* is frequently used for decorative purposes in facing.

Steel finds its use in corrugated sheets for roofing, for girders, frames, etc. Various shapes are employed in construction.

Plastics are artificial materials used in construction work *for a vast number of purposes.[2] Nowadays plastics, which are artificial materials, can be applied to almost every branch of building, from the laying of foundation to the final coat of paint. Synthetic resins are the main raw material for plastics. Plastics have some good advantages as they are lighter than metals, not subject to corrosion, *and they can be easier machined.[3] Besides, they are inflammable, they can take any color and pattern, and they are good electrical insulators. More over, they possess a high resistance to chemical action.

A lot of decorative plastics, now available, have brought about a revolution in interior and exterior design. But plastics are used now not only for decoration. These materials are sufficiently rigid to stand on their own without any support. They can be worked with ordinary builders' tools.

Laminate is a strong material manufactured from many layers of paper or textile impregnated with thermosetting resins. This sandwich is then pressed and subjected to heat. Laminate has been developed for both inside and outside use. It resists severe weather conditions for more than ten years without serious deformation. As a structural material it is recommended for exterior work. Being used for surfacing, laminate gives the tough surface.

Foamedglass is a high-porosity heat insulating material, available in block made of fine-ground glass and a frothing agent.

Foamed glass is widely used in prefabricated house building, to ensure heat insulation of exterior wall panels, and in industrial construction.

Foamed glass has a high mechanical strength, is distinguished by moisture, vapour and gas impermeability. It is non-inflammable, offers resistance to frost, possesses a high sound adsorption, and it is easily sewn and nailed.

Structural foamed glass blocks designed to fill ceilings, and for making interior partitions in buildings and rooms, to ensure heat and sound insulation.

For insulation mineral wool or cinder wool is often resorted to.

resist [ri'zist]—v сопротивляться

sawdust ['so:dAst] —*n*опилки

span—*n*промежуток времени, период времени

subject [sab'drjekt]—v (to) подвергать; подчинять

tensile ['tensail] —*adj*растяжимый

veneer [vi'nia] —*n*шпон, фанера

4. Learn to recognize international words. Give Russian equivalents to the following words without a dictionary

industry ['indastri] information [infa'meijn] progress ['prougras] brilliant ['brilj ant] metal ['metal] fact [fekt] operation [apa'reijn]

focus ['foukas] emphasis ['emfasiz] hyperbole [hai'pa:boli] business ['biznis] semester [si'mesta] company ['клтрЭт] enthusiasmfan' Gjuziazm]

CXXV. *A few explanations to the text.*

196. ...the first joints of the fingers — первымифалангамипальцев

139. .. for a vast number of purposes. —длямногихцелей

140. .. and they can be easier machined.—иихлегчеобработать.

CXXVI. *Key vocabulary / expressions*

consider |kan' sida] —vрассматривать, обсувдать; обдумывать cross-section ['krosakjn]- nпоперечное сечение, поперечный разрез, профиль derive (from)—vполучать; извлекать; происходить frothfroG] — пена; vпениться handle [hsendl]- vбрать руками, держать в руках impermeability [imрэ:пуэ'Ы1Ш] — и непроницаемость;

герметичность kiln [kiln] —*n* печь для обжига mortar ['mo^—л раствор plywood ['plaiwuid]—*n* фанера

resist [ri'zist]—v сопротивляться

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CXXVII. ***A few explanations to the text.***

197. ...the first joints of the fingers — первымифалангамипальцев

141. .. for a vast number of purposes. —длямногихцелей

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CXXVIII. ***Key vocabulary / expressions***

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герметичность kiln [kiln] —*n* печь для обжига mortar ['mo^—л раствор plywood ['plaiwuid]—*n* фанера

lll) ***Phonetic drill***

lll) *Read the words keeping in mind differentpronounciation of letter c*

[j] sociology, special, official, financial, ancient, depreciation [s] process, concept, perception, recipient, licence, medicine

lll) *Mind the stress when reading*

enumeration, atomic, hydraulic, differentiation, appearance, possible, structure, competitor, equipment, military, deployment, specific, customer, competitive, remember, consistency, character, competition, assistant, pneumatic.

mmm) ***Wordconstruction (Different ways to construct words)***

Translate thefollowing words Keeping in mind their suffixes. Memorise the words of the same stem con' sider—conside' ration — con' siderable — conside'rate re'late — re'lation — 'relative — 'relatively-

com' pose —' composite—compo' sition — com' positive tense — tensile — tension

CXXVIII. *Translate the following words as nouns and as verbs:*

handle, span, crack, hand, bank, stress, place, approach, result, rule, view, house, market, study, progress, host, offer.

CXXVIII. *Translate the given words keeping in mind that* приставка/юл—означает отрицание или отсутствие чего-л.

non-military, non-inflammable, non-aggressive, non-effective, non-productive, non-alcoholic, nonretumable, nonforgiving, nonefficient.

CXXIX. ***Add the missing parts of the sentences from the text***

198. . .for building purposes are divided into two groups called softwoods and hardwoods.

143. However, timber is still employed ...

3 ordinary, hollow or porous, lightweight, multicolor bricks

for decorative purposes, etc.

nnn) ... they use natural stones such as marble, granite, basalt, limestone and sandstone.

aaaa) .. while brass is frequently used for decorative purposes in facing.

uu) These materials are sufficiently rigid to stand...

1 severe weather conditions for more than ten years without

serious deformation.

CXXX. ...to ensure heat insulation of exterior wall panels, and in industrial construction.

CXXXI. It is non-inflammable, offers resistance to frost,...

шлаковая вата

преднапряженный бетон

площадь поперечного сечения

выдержать напряжение растяжения (растягивающее напряжение)

l) ***Tell the group about any of the building materials you know better about. Add your own information***

m) ***Speaking Practice***

m) *Discuss different building materials from the text with your partner finishing the following phrases:*

f) What you need most of all is...

g) Another important thing is...

3.. . .can make a real difference.

4.1 think ... is pretty important too.

m) *Combine one word from each section to make at least 8-10 sentences.*

I	don't like can't stand hate like look forward enjoy love 'd rather	late strange flight getting losing meeting finding out missing	interesting people schedules drafts new experiences problems sightseeing plans delays new ideas

CXXXI. *Speaking Practice. Discuss the topic "My Student's Day" with your partner using such words as*

a technique, to sail through, to stick to, motivation, a long-term goal, to fail in a subject, to work hard at, to make good (poor) progress in, to attend (miss) lectures, to lag behind the group, to combine work with study, to catch up with the group, to take notes at a lecture, to have a place at the hostel (dormitory, re si - dence), grant, tutor, supervisor, term, semester, (undergraduate student, to specialize in, to be expelled from, well-stocked, campus, recruit, a pass, tutorial, finals, extracurricular, to socialize, grade, to coach, to arrange a seminar, to spare time, to contribute one's time to, a seminar (lecture) o n . t o make it a rule to do smth.

CXXXII. ***Learn the dialogue by heart***

Customer. I would like to order a countryside house. Here is the project.

Foreman: Let's see. A two-storey house with a garage. Ten rooms and two staircases. What will the foundation be made of? Concrete?

C: Yes, ferro-concrete.

F.: And what about the walls?

C: I want red brick walls. The windows are large. By the way, the panes should be airtight. I want them to be double-glazing! *F.:* We'll make them hermetic with putty. We put it in the grooves, and then fix the panes.

C: Excellent. The hinges and handles should be bronze.

F.: Ok. What type of roof would you like?

C.: I want the roof to be flat, with a small garden.

F.: Do you have an interior-designer?

C.: Yes, but the drafts aren't ready.

F.: What idea does he have?

C..- There will be a mantelpiece in the hall and the walls will be decorated with panels.

F: Plastic panels?

C: Oh, no. Panels must be made of wood.

F.: What wood do you prefer?

C.; I think oak is the best.

F.: How do you pay the construction?

C: I've got a mortgage for 25 years from the bank.

F.: So we'll make oak panels then.

Практическое занятие №41.

Тема 41. ModernBuildingMaterials(2)

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

Теоретическаячасть:

Modern Building Materials (2)

Concrete is perhaps the most widely spread building material used nowadays. Concrete is an artificial stone, made by thoroughly mixing such natural ingredients or aggregates as cement, sand and gravel or broken stone together with sufficient water to produce a mixture of the proper consistency. It has many valuable properties. It sets under water, can be poured into moulds so as to get almost any desirable form, and together with steel in reinforced concrete it has very high strength, and also resists fire. Prestressed concrete is most widely used at present while prefabricated blocks are employed on vast scale for skeleton structures.

AGGREGATES FOR CONCRETE

By the simple definition from the dictionary "aggregates are the materials, such as sand and small stones, that are mixed with cement to form concrete". In other words *aggregates (or cushioning materials)* can be defined as a mass of practically inert mineral materials, which, when surrounded and bonded together by an active binder, form the rock. This rock is denoted by the general term *concrete.*

Aggregates have three principal functions in the concrete: they provide a relatively cheap filler for the concreting material, or binder; they provide a mass of particles which are suitable for resisting the action of applied loads, of abrasion, of percolation of moisture through the mass, and of climate factors; they reduce volume changes resulting from the action of the setting and hardening of the concrete mass.

All aggregates, both natural and artificial, which have sufficient strength and resistance to weathering, and which do not contain harmful impurities may be used for making concrete.

As aggregates such natural materials as sand, pebbles, broken stone, broken brick, gravel, slag, cinder, pumice and others can be used.

PRESTRESSED CONCRETE

Prestressed concrete is not a new material. Its successful use has been developed rapidly during the last two decades, chiefly because steel of a more suitable character has been produced. Concrete is strong in compression but weak when used for tensile stresses.

If, therefore, we consider a beam made of plain concrete, and spanning a certain distance, it will at once be realized that the beam's own weight will cause the beam to "sag" or bend. This sagging at once puts the lower edge of the beam in tension, and if the crosssectional area is small, causes it to break, especially if the span is relatively large.

If, *on the other hand', we use a beam of similar cross-section, but incorporate steel bars in the lower portion, the steel will resist the tensile stress derived from the sag of the beam, and thus assist in preventing it from breaking.

In prestressed concrete steel is not used as reinforcement, but as a means of producing a suitable compressive stress in the concrete. Therefore any beam (or member) made of prestressed concrete is • permanently under compression, and is consequently devoid of crack under normal loading, or so long as the "elastic limit" is not exceeded.

Prestressed concrete is not only used for beams but is now employed extensively for columns, pipes, and cylindrical water towers, storage tanks, etc.

A few explanations to the text

Key vocabulary */expressions*

on the other hand,—сдругойстороны
bend [bend] — vсгибаться; гнуться; изгибаться
crack ['kraek] — *n* 1. треск 2. трещина
desire [di'zaia] — и желание; просьба, требование
gravel ['grasvol] — гравий
load [loud] — *n*груз; нагрузка
sag [sasg] — оседать, обвивать; падать"
store ['sto:]— *n*запас; склад;/?/универсальный магазин
tensile ['tensailj—растяжимый

Phonetic drill. Read the words paying attention to the pronunciation of the italisized letters *[s:]*

Purpose	virtual	certain	work
urgent	mirth -	alternate	worse
burden	birch	term	worship
turn	sir	perhaps	worth
surface	fir-tree	external	world

Wordconstruction (Different ways to construct words)

Write out international words out of the text and translate them without a dictionary

Translate thefollowing words Keeping in mind their suffixes Memorise the words of the same stem

em' ploy—employ' ee—em' ployer—em' ployment 'nature — 'natural — 'naturally compress—compressor—compression

Add the missing parts of the sentences from the text

. .to produce a mixture of the proper consistency.
Concrete is an artificial stone, made by thoroughly...
...they provide a relatively cheap filler for the concreting material, or binder;...
144. This sagging at once puts the lower edge...
5—as a means of producing a suitable compressive stress in the concrete.
. .any beam made of prestressed concrete is permanently under compression...
199. This sagging at once puts the lower edge....
145. *Find in the text equivalent Russian phrases to the following English*
a relatively cheap filler
the proper consistency
resistance to weathering
spanning a certain distance
the cross-sectional area
negotiated fee
146. *Find in the text equivalent English phrases to the following Russian*
вредные примеси
удачное использование
цементируемый материал
искуственный камень

быть постоянно под напряжением
заполняющие материалы
147. *Speaking Practice. Switch on your imagination.*
147. *Complete the sentences*
ooo) The worst thing for me is...
ppp) What I love most is...
qqq) The best thing for me is...
rrr) What I hate most...
147. *Let's talk a bit*
bbbb) Why is concrete more fit for foundation?
cccc) What floor covering is the best?
CXXXIII. What colour should bedroom walls be? (kitchen walls, living- room walls)
CXXXIV. What should a chimney be made of?
CXXXV. Why is it nice to have a mantelpiece?
CXXXVI. What timber is considered to be the best for the window frames?
CXXXVII. What professionals does a construction team need?
200. *We continue enlarging your vocabulary. International words:*

ventilation [ventileijn]	portion ['po:Jn]
hermetic [ha'metik]	compression [kam'prejn]
stress ⌈stres⌋	mass ⌈mass⌋
mineral ⌈тшпэгэ1⌋	limit [limit]
cylinder ['silinda]	block [blok]
elastic [i'lsestik]	tank [taerjk]
subordination [s3bo:di'neiJn]	skeleton ['skelitn]

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, adjогромный

2. o**utput, n**выпуск
3. costpriceсебестоимость
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, включать
14. penetration, n проникание
15. as yet пока, всёеще
16. c**hallenge, 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 material sindustry 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 andmetals, which are used for bearing structures.b) Binding materials such as lime, gypsum and cements, which are used forjointing different planes.c) Secondary or auxiliary materials, which are used for interior parts of thebuildings, such as tiling, synthetic linoleum, coatings and other facing materials.

3. If the materials do not require any technological changes in their chemicalstructure 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 themdon't need any special finish. Cement, concrete, reinforced concrete, plastics andothers are examples of artificial building materials. The great discoveries of ourtime in physics, chemistry, and other sciences make it possible to create newbuilding materials.4. The properties of building materials are generally classified as physical,chemical and mechanical. Physical properties of materials include theircharacteristics 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 restressed 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.

Вопросыизадания.

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.
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.— Екатеринбур: 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.F., 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 №43.

Тема 43. Concrete/ Бетон

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

Теоретическаячасть:

Concrete

The most common form of concrete consists of Portland cement, construction aggregate (generally gravel and sand) and water.

Concrete does not solidify from drying after mixing and placement; the water reacts with the cement in a chemical process known as hydration. This water is absorbed by cement, which hardens, gluing the other components together and eventually creating a stone-like material. When used in the generic sense, this is the material referred to by the term concrete.

Concrete is used more than any other man-made material on the planet. It is used to make pavements, building structures, foundations, motorways/roads, overpasses, parking structures, brick/block walls and bases for gates, fences and poles.

As of 2005, about six billion cubic meters of concrete are made each year, amounting to the equivalent of one cubic meter for every person on Earth. Concrete powers a US$35 billion industry which employs over two million workers in the United States alone. Over 55,000 miles of freeways and highways in America are made of this material. China currently consumes 40 % of world cement production.

CXXXVIII. Find English equivalents in the text:

строительный заполнитель -
пескогравий -
смешивание и укладка -
известный как -
склеивая другие компоненты -
материал похожий на камень -
общий смысл -
искусственный материал -
паркинговые сооружения
кирпичные стены -
основание для забора -
промышленность, приносящая прибыль в 35 млрд долларов -
только в Соединенных Штатах -
мировое производство бетона -

CXXXIX. Give Russian equivalents to the following:

common form -
Portland cement -
solidify -
chemical process -
hydration -
harden -

pavement -
overpass -
pole -
amount to -
employ -
freeways and highways -

CXL. Translate the text and say whether these statements are true or false:

201. Concrete consists of Portland cement, gravel and sand.
202. Concrete hardens after mixing and placement.
203. Concrete isn't used more than any other natural material on the planet.
204. We use concrete to make cars and heavy trucks.
205. Concrete wasn't used till the year 2005.
206. Since 2005 the production of concrete has increased greatly.
207. Very few workers in the United States deal with concrete production.
208. They do not use concrete in making highways in the United States.
209. China consumes only a small part of world cement production.

CXLI. Choose the right variant:

148. As of 2005, about six billion cubic meters of concrete are made each year .

а) Что касается 2005 года, около 6 млрд. $м^3$ бетона замешивается каждый год ...

б) В 2005 году было произведено около 6 млрд. $м^3$ бетона ...

в) Начиная с 2005 года, около 6 млрд. $м^3$ бетона производится каждый год .

CXLII. Concrete powers a USD 35 billion industry ...

а) Бетон дает в долларах США 35 миллиардную прибыль промышленности.

б) Бетон приводит в действие 35 миллиардную промышленность .

в) Бетон поддерживает промышленность, приносящую в долларах США 35 миллиардную прибыль ...

CXLIII. ... which employs over two million workers in the United States alone.

а) . что предоставляет работу двум миллионам рабочих в Соединенных Штатах.

б) . которая обеспечивает работой более двух миллионов рабочих только в Соединенных Штатах.

в) . которая дает работу только двум миллионам рабочих в Соединенных Штатах.

CXLIV. This water is absorbed by cement, which hardens, gluing the other components together .

а) Эта вода поглощает цемент, который затвердевает, склеивая другие компоненты .

б) Эта вода абсорбируется цементом, который схватывается при помощи клея и других компонентов .

в) Вода поглощается цементом, который затвердевает, склеивая другие компоненты .

210. **Continue the sentence:**

149. The most common form of concrete consists of ...

sss) . construction aggregate and Portland cement.
ttt) ... gravel, sand and water.
uuu) . construction aggregate, Portland cement and water.

1 Concrete hardens .

dddd) . from drying after mixing and placement.
vv) . after water reacts with cement.
ww) ... after mixing and drying.

CXLV. Concrete is used more than any other ...

211. ... artificial material.
212. ... natural material.
213. ... fire-resisting material.

CXLVI. A great deal of concrete is made each year, amounting .

150. ... to one cubic meter for every person on Earth.

151. ... six billion cubic meters.
152. ... to USD 35 billion industry.

VII. a) Complete the table:

Noun	Verb	Adjective
-	place	-
reaction	-	-
-	-	absorbed
-	park	-
consumer	-	-
-	-	employed
hardener	-	-

vvv) **Choose the word from the table to complete the sentence:**

eeee) In the process of concrete production the water is ... by cement, which hardens, creating a stone-like material.

ffff) Concrete is used to make foundations, brick walls, building and ... structures, pavements and things like that.

gggg) Concrete production industry ... over two million workers in the United States alone.

hhhh) Concrete does not solidify from drying after mixing and . .

iiii) China currently ... 40 % of world cement production.

jjjj) The water . with the cement in chemical process known as hydration.

kkkk) After the water is absorbed by cement, the aggregate usually . .

VIII. Scan the text and answer the questions:

xx) What does the most common form of concrete consist of?

yy) When does concrete harden?

zz) How is this process called?

aaa) What is concrete used for?

Is concrete a popular material?

CXLVII. How much concrete is made each year?

CXLVIII. How many people does concrete production employ in the United States?

CXLIX. How many miles of highways are made of concrete in America?

Who is the largest consumer of world cement production?

Практическое занятие №44.

Тема44. Reinforcedconcrete/ Железобетон

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

Теоретическаячасть:

Reinforced concrete

Reinforced concrete is a combination of two of the strong-' est structural materials, concrete and steel, either of which is used separately. Consequently, the resulting material has the advantages of both.

Concrete has poor elastic and tensional properties, but it is rigid, strong in compression, extremely durable under and above ground, and in the presence or absence of air and water, it increases in strength with age, it is fire resistant, and suitable for any architectural or engineering forms.

Steel has great tensional, compressive and elastic properties but is not durable below ground or if exposed to moisture, it loses its strength with age or exposure to high temperature. Steel is also fragile in appearance, giving an impression of weakness rather than strength. When strength is the most important consideration great care must be taken to produce a concrete that will be homogeneous and as dense as possible. Homogeneity is not possible without thorough mixing. To obtain strength and density, the aggregate must be sand and gravel, or crushed rock clean and free from organic matter, and carefully graded from the smallest to the largest particles.

For general work the most suitable proportions of cement and aggregate are: 1 part cement, 2 parts sand, and 4 parts gravel or crushed rock.

Let us consider what is the effect of the addition of steel reinforcement to a concrete.

Steel is a material which does not undergo shrinkage on drying, and therefore the steel acts as a restraining medium in a reinforced concrete member; shrinkage causes tensile stresses in the concrete which are balanced by compressive stresses in the steel. Now the steel itself deforms under the induced stresses so that there must be a resultant shrinkage moment in a reinforced concrete member.

An economic quantity of steel, however, can be so disposed as to distribute the cracking under shrinkage stresses and thus render it innocuous. This is the problem for the designer of a reinforced concrete building, and it demands careful consideration on a proper design basis, both of the quantity and of the distribution of the reinforcement.

Tasks after reading:

4. Compare your variant of key-sentences to each paragraphs with these ones. Choose the best variant and prove your point of view. Add some more missing statements

1. Reinforced concrete is a combination of concrete and steel with advantages of both.
2. Steel adds properties that concrete has not got, but for homogeneity it is important to put some more aggregates into mixing.
3. Being restraining medium steel causes tensile stresses in the concrete which are balanced by compressive stresses in steel.

5. Finish these sentences. Add some more information from the text

1. Concrete has poor elastic and tensional properties but…
2. Steel has great…but it is not…
3. To obtain strength and density …
4. The steel deformes under the induced stresses…
5. The problem for the designer of a reinforced concrete building is…

6. Using statements from ex.4 and 5 speak briefly about reinforced concrete

Tasks before reading:

7. Find correct translation of Russian words. Explain their meaning in English

единицы	moment
балка	precast
монтировать, устанавливать	ribbed
перевернутый	channel
склад	hollow
уменьшение	i-beam
скошенный	slabs
резиновый	units
стержень, брус	core
сборный	cast-in-place
демонтирование	inverted
каркас	filler
сваривать	beams
обеспечивать	assemble
гладкий, ровный	prestressed
желоб, паз	warehouse
ребро	plain
балка тавровая	reduction
ребристый	smooth
плавить, выливать, отливать	sloped
плиты	groove
заполнитель	inflated
предварительно напряженный	rubber
прут	dismantling
заанкеровать	bar
мастерская, склад	cage
отлитый на месте строительства	shear
фланец	rob
инвертировать, изменять	weld
пустой, полый	anchor
гладкий	web
желоб, паз	cast
наполненный воздухом	flange
отделять	invert
балка двутавровая	shop
скалывание ,срез	secure
сердцевина стержень	detach
стропило, балка, брус	joist
воспринимающий изгибающий момент	t-section

8. Find synonyms to the following words. Compose your own sentences with them
Склад, гладкий, балка, желоб,паз

9. Make suitable word combinations. Translate them

precast	core
ribbed	slabs
i-beam	section
hollow	joists
lightweight	filler

presstressed	units
chanell	beams
erection	equipment
sloped	grooves
cement	mortar
inflated	joists
i shaped	bars
reinforcing	rods
shear	rubber tubes
moment	cage
web	steel
shop	floor
main	

Практическое занятие №45.
Тема 45. Woodworking/Деревообработка
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

Теоретическаячасть:

Woodworking
Woodworking is the forming and shaping of wood to make useful and decorative objects. It is one of the oldest crafts and ranks as a popular hobby and an important industry. A skilled woodworker with a well-equipped home workshop can build items as simple as a birdhouse or as complicated as decorative furniture. Tools for a workshop can bepurchased at hardware and department stores. Lumber retail stores and hobby shops sell a wide variety of wood.
The construction industry employs carpenters who construct the wooden framework of buildings. Other kinds of woodworkers include finish carpenters and cabinetmakers. Finish carpenters do the inside trim work around windows, cabinets, and other features that must fit exactly. Cabinetmakers design, shape, and assemble furniture, built-in cabinets, and stairways.
The history of woodworking goes back to about 8,000 B.C., when people first used an ax as a woodworking tool. In the Middle Ages, woodworkers and other craft workers formed organizations called guilds. The guilds were similar in some ways to today’s labor unions.

Find English equivalents in the text:
деревообработка -
декоративные предметы -
важная отрасль -
строительный магазин -
магазин для розничной продажи пиломатериалов -
магазин товаров для хобби -
деревянный каркас -
плотник-отделочник -
краснодеревщик -
внутренняя отделочная работа -
встроенный шкаф -
ремесленник -
сегодняшние профсоюзы -
хорошооборудованнаядомашняямастерская -

Give Russian equivalents to the following:
skilled woodworker -
decorative furniture -
department store -
wide variety of wood -
must fit exactly -
assemble furniture -
stairway -
woodworking tool -
called guilds -
be similar in some ways -
other kinds -
shaping of wood -
ranks as a popular hobby -
framework of a building -

Translate the text and say whether these statements are true or false:
Woodworking is a comparatively new industry.
Any woodworker can build simple and complicated items as well.
Wood for a workshop can be purchased at a department store.
You can find a wide variety of wood at lumber retail stores.
Carpenters are often employed in the construction industry.
Cabinetmakers do not deal with woodworking.
Finish carpenters usually do the work on the roof of the building.
An ax as a woodworking tool was first used long before Christ.
Today carpenters form organizations called guilds.

Choose the right variant:
Woodworking is the forming and shaping of wood ...
а) Деревообработка - это формирование и моделирование дерева .
б) Деревообработка - это придание формы лесоматериалам .
в) Деревообработка - это придание формы и конфигурации дереву .
Woodworking is one of the oldest crafts and ranks as a popular hobby
а) Деревообработка - это одно из древнейших ремесел и считается популярным хобби .
б) Деревообработка - это одно из древнейших ремесел, которое считается таким же популярным, как и хобби .

в) Деревообработка - это одна из старейших профессий, которая стоит в одном ряду с популярным хобби .
Other kinds of woodworkers include finish carpenters and cabinetmakers.
а) Другие типы деревообработчиков включают окончательных плотников и краснодеревщиков.
б) Другие типы деревообработчиков включают плотников- отделочников и оформителей кабинетов.
в) Другие типы деревообработчиков включают столяров- отделочников и краснодеревщиков.
The history of woodworking goes back to about 8000 B.C. ...
а) История деревообработки берет свое начало примерно с 8000 года до нашей эры .
б) История деревообработки началась 8000 лет назад ...
в) История деревообработки возвращает нас к 8000 году до рождества Христова ...

Continue the sentence:

A skilled woodworker with a well-equipped home workshop can ...
... design and construct the whole project.
. make pavements and overpasses.
... make useful and decorative objects.
Wood for woodworking can be purchased at .
... hardware stores.
. department stores.
... lumber retail stores.
Carpenters are employed by the construction industry to .
... mix concrete.
... design the modern roofs of buildings.
... construct the wooden framework of buildings.
Built-in cabinets and stairways are designed .
... by a design team.
. by cabinetmakers.
. by any woodworker.
Finish carpenters deal with ...
... construction of a birdhouse.
... construction of the wooden framework of buildings.
. the inside trim work.

VII. a) Complete the table:

Noun	Verb	Adjective
-	decorate	-
-	-	ranked
equipment	-	-
-	purchase	-
-	-	varied
employment	-	-
-	include	-
-	-	trimmed
assembly	-	-
-	organize	-

Choose the word from the table to complete the sentence:

The wooden framework of buildings is constructed by carpenters who are . by the construction industry.
There are other kinds of woodworkers which . finish carpenters and cabinetmakers.
Nowadays woodworking ... as a popular hobby and an important industry.
Cabinet makers design, shape and . furniture, built-in cabinets and stairways.
Woodworkers form and shape wood to make useful and ... objects.
The inside ... work is usually done by finish carpenters.

You can ... tools for a workshop at a hardware store.
In ancient times woodworkers formed ... called guilds.
A wide ... of wood is sold in lumber retail stores.
Having good ... at a home workshop a woodworker can build simple and complicated items as well.

VIII. Scan the text and answer the questions:

What is woodworking?
When does the history of woodworking begin?
Where can a skilled woodworker build simple and complicated items?
Where can you buy tools for a workshop?
What do lumber retail stores sell?
Who constructs the wooden framework of buildings?
What other professions do woodworkers include?
What do cabinetmakers deal with?
Who does the inside trim work around wooden features that must fit exactly?
When did people use an ax as a woodworking tool?
When did woodworkers start forming guilds?
Were the guilds similar to any today's organizations?

Практическое занятие №46.
Тема 46. Woodworking (2)Деревообработка

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

Теоретическаячасть:

Woodworking (2)

Drilling enables a woodworker to connect sections of wood with screws, metal plates, and hinges. Drilling may also be required when constructing some joints. Braces and hand drills have bits to make holes of different sizes for various purposes. Portable electric drills and drill presses also use bits to drill holes. They have attachments for sanding and other purposes.

Fastening. Sections of wood are fastened together with metal fasteners, such as screws and nails, and with adhesives. Tools for fastening include screwdrivers and hammers. Screwdrivers insert screws that connect sections of wood and hold hinges and metal plates. Hammers are used to drive in nails and a variety of other types of metal fasteners.

Gluing is one of the oldest methods of fastening sections of wood and a variety of adhesives are used in woodworking. Polyvinyl resin emulsion glue, or white glue, can be applied directly from the bottle. It should not be used if it will come in contact with water or high temperatures.

Find English equivalents in the text:

детали из дерева -
давать возможность плотнику -
ручной бурав -
коловорот -
для различных целей -
сверлильный станок -
насадка для шлифовки -
закрепление -
металлическое крепежное средство -
склеивающее вещество -
вкручивать шурупы -
вбивать гвозди -
поливиниловый эмульсионный клей -
прямо из бутылки -
его не следует использовать - делать отверстия -

Give Russian equivalents to the following:

drilling -
to connect sections -
a screw -
a metal plate -
a hinge -
some joints -
a portable electric drill -
a hand drill bit -
other purposes -
a nail -
tools for fastening -
a screwdriver -
a hammer -
gluing -
white glue -
high temperature -

Translate the text and say whether these statements are true or false:

A woodworker can connect sections of wood with the help of a hand drill only.
Woodworkers use nails to make holes of different sizes for various purposes.
There are bits of different size for portable electric drills and drill presses.
Braces and hand drills have attachments for sanding and other purposes.
Various adhesives are used for fastening sections of wood together.
Woodworkers use hammers to insert screws that connect sections of wood.
One of the oldest methods of fastening sections of wood is drilling.
Screwdrivers are used for drilling.
White glue should be used after it will come in contact with water.

Choose the right variant:

Drilling may also be required when constructing some joints.

а) Сверление возможно также необходимо, как и соединение стыков.
б) Сверление может также понадобиться при соединении некоторых стыков.
в) Сверление может также требовать соединения стыков.

They have attachments for sanding and other purposes.

а) У них есть дополнительные присоединения для посыпания песком и других целей.
б) Они приспособлены для шлифовки и других целей.
в) У них есть насадки для шлифовки и других целей.
Sections of wood are fastened together with metal fasteners ...
а) Детали из дерева крепятся металлическими крепежными средствами.
б) Деревянные секции прикрепляют к металлическим крепежам .
в) Секции из дерева крепятся вместе с металлическими крепежами .
Gluing is one of the oldest methods of fastening sections of wood and a variety of adhesives are used in woodworking.
а) Склеивание один из древнейших методов скрепления деталей из дерева и различных клеящих материалов, используемых в деревообработке.
б) Склеивание один из древнейших методов при креплении секций из дерева к различным клеящим материалам и используется в деревообработке.
в) Склеивание один из древнейших методов соединения деталей из дерева и различные клеящие материалы используются в деревообработке.

Continue the sentence:

Woodworkers use screws, metal plates and hinges .
. to make holes of different sizes.
. to connect sections of wood.
. to drive them in sections of wood.
Portable electric drills have . for sanding and other purposes.
... bits.
.braces.
.attachments.
Woodworkers use . to drive in different types of metal fasteners.
.screwdrivers.
.hammers.
.braces.
Woodworkers use screwdrivers .
. to drive in nails and a variety of other types of metal hinges.
. to make holes of different sizes for various purposes.
. to insert screws that connect sections of wood.

VII. a) Complete the table:

Noun	Verb	Adjective
-	vary	-
-	-	constructed
connection	-	-
-	apply	-
-	-	required
fastening	-	-
-	attach	-
-	-	contacted

b) Choose the word from the table to complete the sentence:

Woodworkers use screwdrivers to . sections of wood.
Screws, nails and adhesives are used for . sections of wood together.
Woodworkers use braces and hand drills to make holes for ... purposes.
They usually . white glue directly from the bottle.
Drilling is also used to . some joints.
Connection of sections of wood may also . drilling.
Portable electric drills have . for sanding and other purposes.
They usually do not use white glue after it comes in ... with water.

VIII. Scan the text and answer the questions:

What do woodworkers use drilling for?

How do they usually connect sections of wood?
What do woodworkers use for making holes of different sizes?
What do portable electric drills have for sanding?
What are metal fasteners used for?
What tools for fastening do woodworkers usually use?
How do woodworkers use hammers?
What is used for glueing sections of wood?
How can white glue be applied?
When shouldn't white glue be used?

Практическое занятие №47.

Тема 47. Sanding and finishing / Шлифовка и отделка

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

Теоретическаячасть:

Sanding and finishing

Sanding removes tool marks and makes wood surfaces smooth for finishing. Sanding should not begin until the wood has been cut to its final size. Most abrasive paper manufactured for use by hand has rough particles of the minerals flint or garnet. Aluminum oxide is a common sanding material used in such machines as a portable belt sander or a vibrating sander. Portable belt sanders work better than vibrating sanders on large wood surfaces.

Woodworkers use a variety of finishes to protect wood and to bring out the beauty of the grain. A stain is a dye that colors wood without hiding the pattern and feel of the grain. Paint covers the grain of the wood and provides a color of its own. Varnish, shellac, and lacquer add a hard, glossy finish while exposing the beauty of the wood. Wax protects varnish and has a smooth, shiny finish when polished. Enamel is a type of glossy paint.

Find English equivalents in the text:

следы от инструмента -
поверхность дерева -
наждачная бумага -
грубые частицы -
шлифовальный материал -

ленточно-шлифовальная ручная машина -
вибрационный шлифовальный станок -
целый ряд покрытий -
показать красоту -
не скрывая структуру -
строение (структура) дерева -
глянцевая поверхность -
глянцевая краска -
красота структуры дерева -
такие минералы как кремень или гранит –

Give Russian equivalents to the following:

smooth for finishing -
final size -
manufactured for use by hand -
aluminum oxide -
beauty of the wood -
a stain -
a dye -
that colors wood -
provides a color of its own -
a varnish -
a shellac -
shiny finish -
an enamel -

Translate the text and say whether these statements are true or false:

Finishing makes wood surfaces smooth for sanding.
Before sanding the wood should be cut to its final size.
Most abrasive paper manufactured for use by hand is very soft.
Vibrating sanders are the best machines used for sanding large wood surfaces.
A variety of lacquers is used to protect wood.
A stain is used for painting wood and hiding the pattern of the grain.
Finishes cover wood and provide a color of its own.
Varnish, shellac, and lacquer are used for exposing the beauty of the wood.
Wax is used for providing a smooth and shiny finish.

Choose the right variant:

Most abrasive paper manufactured for use by hand has rough particles .
а) Большую часть наждачной бумаги производили для использования вручную, которая имела грубые частицы .
б) Большинство наждачки выпускалось вручную и имело грубые частицы..
в) Большая часть наждачной бумаги, произведенной для использования вручную, имеет грубые частицы .
Aluminum oxide is a common sanding material used in such machines .
а) Оксид алюминия - это общий материал для шлифования и использовался в таких машинах .
б) Оксид алюминия - это распространенный материал для шлифовки, используемый в таких машинах .
в) Оксид алюминия является шлифовальным материалом общим для таких машин .
A stain is a dye that colors wood without hiding the pattern ...
а) Морилка - это красящее вещество, которое окрашивает дерево, не скрывая его структуру .
б) Морилка - это красящее вещество под цвет дерева, которая не скрывает его структуру .

в) Морилка - это красящее вещество, используемое для того, чтобы цвета дерева не скрывали структуру .

Varnish, shellac, and lacquer add a hard, glossy finish while exposing the beauty of the wood.

а) Глазурь, шеллак и лак добавляют твердости глянцевой поверхности, показывая красоту дерева.

б) Глазурь, шеллак и лак делают поверхность твердой и глянцевой, демонстрируя красоту дерева.

в) Глазурь, шеллак и лак придают твердой поверхности глянец, когда дерево выставляется напоказ.

Continue the sentence:

Sanding makes wood surfaces smooth for finishing ...

... while cutting it to its final sizes.

... while exposing the beauty of the wood.

... while removing tool marks.

Abrasive paper is manufactured for .

. use by hand only.

... use by hand and machines as well.

. use by machines only.

A variety of finishes are used ...

... to remove tool marks.

... to color wood and to hide the pattern of the grain.

... to guard wood and provide the beauty of a color of its own.

Woodworkers use . to color wood and to add a hard, glossy finish to its surface

. a stain .

. a varnish .

. wax .

VII. a) Complete the table:

Noun	Verb	Adjective
-	finish	-
-	-	protected
manufacture	-	-
-	vary	-
-	-	colorful
polish	-	-
-	expose	-
provision	-	-

Choose the word from the table to complete the sentence:

They ... abrasive paper for use by hand and by machines as well.

The wood should be cut to its ... size before sanding.

A stain is used to ... wood and to bring out the pattern of the grain.

. finishes are used to guard wood and to show the beauty of the grain.

The grain of the wood is covered with paint which . the color of its own.

Woodworkers usually use varnish to protect wood from . to weather.

Wax is usually used to protect varnish and to ... wood surface.

The main aim of all the finishes used by wood workers is to ... wood and to provide the color of its own.

VIII. Scan the text and answer the questions:

How do woodworkers make wood surfaces smooth for finishing?

When should woodworkers begin sanding?

For what use is most abrasive paper manufactured?

What common sanding material is used in sanding machines?

What sanding machines are considered to be the best ones?

What do woodworkers use to protect wood?

Does a stain hide the pattern and feel of the grain?
What are varnish, shellac, and lacquer used for?
How do woodworkers make the surface of the wood smooth and shiny?

Практическое занятие №48.
Тема 48. Beams/ Балочные перекрытия
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

Теоретическаячасть:

Beams

Precast concrete floor units are at present manufactured mainly in the ollowing different types:
a) Ribbed slabs or channel units;
b) Beams of hollow core type;
c) I-beam section, with either cast-in-place or precast slab;
d) Inverted I-beam joists with lightweight filler blocks between;
e) Beams assembled from hollow concrete blocks;
f) Precast and prestressed floor units.

Channel Beam.—The type most frequently used in industrial building, warehouses, etc., where a plain ceiling is not required.

For sites where heavy erection equipment is available, several of the channel types are precast in one wider beam with several ribs. The advantage of this is quicker erection and a reduction in the quantity of concrete, its disadvantage being that such units are not so suitable for continuity reinforcement.

Hollow Beam.—The hollow beam with a box cross section gives a smooth and plain ceiling finish immediately after erection.

On the external sides there are sloped grooves providing for a better connection with the neighbouring units when the joints are filled in with cement mortar. Because of the plain ceiling, hollow beams are used mostly for dwellings, offices, and such public buildings as schools and hospitals. Channel beams are lighter in weight, easier to manufacture and cheaper.
An important feature in the production of hollow beams is the use of inflated rubber tubes which make dismantling quick, easy, and safe.

I-section.—There are several methods of forming I-shaped joists. In most of them, all reinforcing bars are assembled in advance to form a reinforcing "cage". The shear rods are

welded to the moment bars top and bottom. The shear rods are generally round, welded in between the moment bars, making a space between the moment bars. From the manufacturing standpoint this is ideal, since thesizeof the shear-bars may be kept constant and their spacing can be varied according to the need for shear reinforcing. The reinforcement in these joists is well anchored because of the welded connection between web and main steel.

T-section. — The T type is most simple to manufacture, being cast with the flange inverted on the shop floor. But this section should only be applied to roof structures, or to floors in dwellings, etc., where heavy local superloads are never to be expected. For, although the small mortars joint between the top flanges of the two neighbouring sections might secure an equal deformation of loaded and unloaded members at the designed load, it will crack long before the critical load is reached; at that stage each of the loaded members is detached from the other, and there is no cross distribution of the loads.

Tasks after reading:

11. Put suitable definitions to these characteristics

1…- all reinforcing bars are assembled in advance to form a reinforcing cage.
2…- this section is applied when heavy loads are never expected.
3…- its advantage is quicker erection.
4…- its important feature is the use of inflated rubber tubes.

12. Fill this table paying attention to necessary building materials, usage and some peculiarities

Types	Channel	Hollow	I-section	T-section
Usage				
Building materials				
Peculiarities				

Практическое занятие №49.
Тема49. Strength of slabs/ Прочность плит
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

Теоретическаячасть:

Strength of slabs

The strength of slabs is determined in a similar manner to that of beams, and if they are supported or fixed, at two opposite sides only, the bending moment will be the same as for a beat similarly supported or fixed; but with a slab supported, or fixed, at all four sides the bending moment will not be so great as that for a beat of the same span, owing to the slab being strengthened by the supports at the ends as well as at the sides. A square slab suppbrted on all four sides is twice as strong as the same slab supported on two opposite sides only: this ratio, however, varies as the length increases, the reaction of the side supports becoming greater than that of the ends, until the length exceeds about twice its width when the reaction of the end supports can be ignored as the effect of this reaction on the strength of the slab is too slight to be considered. Consequently, the slab may then be considered as a simple beat of length equal to the width of the slab.

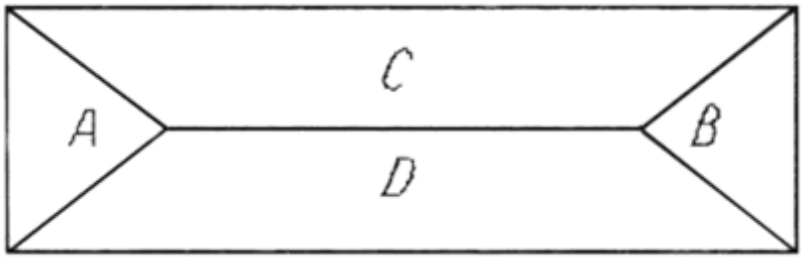

Fig. 1

Fig. 1 illustrates the main fractures in a rectangular slab from overloading. The end supports are considered to carry the load on the triangular pieces *A*and *B,* and the side supports that on the pieces C and *D.* In a square slab the fractures follow the diagonals thus making an angle *of* 45 degrees with the ends, but as the slab increases in length the lines *of* fracture make a smaller angle with the ends.

Consequently, with a square slab, the supports are equally loatled, and as tlle length increases the load on the side supports increases and that on the ends decreases.

It is obvious, therefore, that the reinforcement must be designed for the width, and for the length, ofslabs that are less in length than twice their width. This can be done as with beams, by equating the bending moment with the moment of resistance.

Tasks after reading:

17. Translate these sentences into English. Findsuitablesentencesinthetext

1.В том случае, когда присутствует квадратная плита, нагрузка распределяется равномерно.

2.Считается, что поддерживаемые короткие стороны выдерживают нагрузку треугольных частей А и В.

3.Квадратная плита, поддерживаемая по всем сторонам, в два раза прочнее, чем такая же плита, поддерживаемая только по двум противоположным сторонам.

4.Каркас следует спроектировать по ширине и по длине в том случае, когда присутствуют плиты, чья длина в два раза короче ширины.

18. Choose correct answers to following questions. Add some more information

1. What happens if slabs are supported or fixed at two opposite sides only?

a) the bending moment increases in comparison with the same position of beams;

b) they crack;

c) the bending moment is the same as for supported or fixed beams.

2. What happens if slabs are supported or fixed at four sides?

a)The bending moment decreases in comparison with a beam of the same span;
b) The bending moment increases in comparison with a beam of the less span;
c) The bending moment is similar.
3. What are differences between a square slab supported on four sider and the same slab supported on two opposite sides only?
a)Strength is similar;
b) Strength of the first slab is twice stronger;
c) Strength of the first slab is twice poor.
4.What does ratio depend upon?
a) It depends upon the angle;
b)It depends upon the width;
c)It depends upon the length.
5.What happens when the length exceeds twice the width?
a) The end supports are too slight;
b) Strength of ends increase ;
c) strength of sides decrease.
6. What are differences in fractures between a square slab and a rectangular slab?
a) In a square slab fractures make angle twice more than 45 degrees;
b)In a rectangular slab the lines of fracture make a smaller angle within the ends;
c)In both slabs fractures make similar angles with the sides.
7. In what case the bending moment equates with the moment of resistance?
a)When length of slabs is less twice than their width;
b) When slabs are square;
c) When width of slabs is less twice than their length.

20.Read these questions:

Why are the upper floor steel columns erected *before* the roof decking has been put in place?
Why is the roof decking put in place *after* the upper floor steel columns have been erected?
Now read the answer:
Because the roof decking requires the upper floor steel columns to support it.
Lookat the drawings for phases 1,2,3 and 4 and make similar questions to which these are the answers:
a) Because the concrete foundations require solid ground to support them.
b) Because the column base plates need a flat rigid surface to support them.
c) Because the steel columns transmit their loads through them to the foundations.
d) Because the concrete floors are supported by the beams.
e) Because the weatherproof membrane is laid over the balustrade fixing plates.
f) Because the horizontal cladding panels are fixed to the corner units.
g) Because the vertical cladding panels are fixed to the horizontal cladding panels.
h) Because the workmen require access to the ceiling void to install
the services.
i) Because the partitions are fixed to the suspended ceilings.

21.Identify the part of the building or the phase of the assembly sequence described in these sentences:

a) This cannot be put in place until the upper floor steel columns have been erected.
b) Before fixing these, the workmen erect the corner units.
c) During this phase the beams and bracing are fixed.
d) The workmen fix these after constructing the concrete foundations.
e) The electric wiring is installed during this phase.
f) When the balustrade fixing plates have been fixed, the workmen can start laying this.

22.Read this description of phase 1 of the assembly sequence:

Having completed the preparation of the site, the workmen begin the initial stage. This includes excavating the ground, constructing the concrete foundations, fixing the column base plates and erecting the steel columns. The workmen begin by excavating the ground. This precedes the constructing of the concrete foundations because they require solid ground to support them. This is followed by the fixing of the column base plates. Finally the steel columns are erected.
Now use it as a model to write similar descriptions of phases 2, 3 and 4.

Практическое занятие №50.

Тема 50. Architecture./ 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

Теоретическаячасть:

Vocabulary:

church	**[ʧə:ʧ]**	**церковь**
sidewalk	**['saidwɔ:k]**	**тротуар**
architect	**['ɑ:kitekt]**	**архитектор**
lime	**[laim]**	**известь**
mansion	**['mænʃən]**	**особняк**
marble	**['mɑ:bl]**	**мрамор**
facade	**[fə'sɑ:d]**	**фасад**
designer	**[di'zainə]**	**дизайнер**
tower	**['tauə]**	**башня**
castle	**[kɑ:sl]**	**замок**
architecture	**['ɑ:kitekʧə]**	**архитектура**
fortress	**['fɔ:tris]**	**крепость**
embellishment	**[im'beliʃmənt]**	**украшение**
dome	**[dəʊm]**	**купол**
expansion	**[iks'pænʃən]**	**расширение**
to erect	**[tu: i'rekt]**	**возводить**
superintendent	**[,sju:pərin'tendənt]**	**прораб**
cathedral	**[kə'θi:drəl]**	**собор**

pinnacle	**['pinəkl]**	**башенка**
exterior	**[eks'tiəriə]**	**внешняя часть**
forge	**[fɔ:ʤ]**	**кузница**
architectural	**[,ɑ:ki'tekʧərəl]**	**архитектурный**
adobe	**[ə'dəubi]**	**самана**
buttress	**['bʌtris]**	**подпорка**
citadel	**[ˈsɪtəd(ə)l]**	**цитадель**
compositional	**[ˌkɒmpəˈzɪʃ(ə)nəl]**	**композиционный**
eclecticism	**[ɪˈklektɪˌsɪz(ə)m]**	**эклектизм**
mannerism	**['mænərizm]**	**особенность**
pediment	**['pedimənt]**	**фронтон**
portico	**['pɔ:tikəu]**	**портик, галерея**
postmodernism	**[ˌpəʊstˈmɒdə(r)ˌnɪz(ə)m]**	**постмодернизм**
woodcut	**[ˈwʊdˌkʌt]**	**гравюра на дереве, ксилография**
veranda	**[və'rændə]**	**веранда**
apse	**[æps]**	**апсида**
pointed arch	**['pɔintid ɑ:ʧ]**	**стрельчатая арка**
sacristy	**['sækrɪstɪ]**	**ризница**
gabled	**['geibld]**	**остроконечный**
baptistry	**[baptistrɪ]**	**баптистерий**
neoclassical	**[neɔclasikal]**	**неоклассический**
remodeling	**['ri:'mɔdlɪŋ]**	**перепланировка**
arched colonnade	**[ɑ:ʧt ,kɔlə'neid]**	**арочная колоннада**
Renaissance architect	**[rə'neisəns 'ɑ:kitekt]**	**архитектор эпохи Возрождения**
architectural patronage	**[,ɑ:ki'tekʧərəl 'pætrənidʒ]**	**архитектурный патронаж**
asymmetric plan	**[,æsi'metrik plæn]**	**ассиметричный план**
exposition, exhibition	**[,ekspəu'ziʃən ,eksi'biʃn]**	**выставка**

Architecture is the art or science of planning, building and structures. Without consideration of structural principles, materials, social and economic requirements a building cannot take form.
But without aesthetical quality inherent in its form a building cannot be considered as a work of architecture1 as well. From the very beginning of construction in human history lots of architectural skills, systems and theories have been evolved for the construction of the buildings, which have housed nations and generations of people in any kind of their activity. Writings on architecture are almost as old as writing itself. Books on the theory of architecture, on the art of buildings, and on the aesthetical view of buildings exist in great number. The oldest book, which sets forth the principles, upon which buildings should be designed and which aim is to guide the architect, is the work of Markus Vitruvius Pollio written in the first century B. C.
Architecture is an art. Its nowadays expression should be creative and consequently new. The heritage of the past cannot be ignored, but it must be expressed in modern terms. There exists an evident paradox in the coexistence of change and survival in every period of human civilisation. This paradox of change and repetition is clearly illustrated in any architectural style.
Architecture is also the style or manner of building in a particular country or period of history. There are widely known examples of Gothic architecture all-round the globe. During many centuries mankind admires the architecture of ancient Greece or Roman Empire as well.

Вопросыизадания:
Exercise 1Answer the following questions:
1 What is architecture?
2 What is the oldest book to set forth the principles of construction?
3 How should mankind deal with the heritage of the past?

4 What architecture are widely known all round the globe?
5.What architecture does mankind admire during many centuries?

Exercise2. GiveEnglishequivalentstotheRussianwordsandwordcombinations:

Архитектура - это искусство или наука о планировании, социальные и экономические требования, архитектурные навыки, строительство, системы и теории для строительства зданий, наследие прошлого нельзя игнорировать, выражено в современных терминах, человечество восхищается архитектурой.

Exercise3. Match the words (A) with the appropriate definition (B)

1)Sciencea) the work of building or making something, especially buildings,bridges, etc.
2) Constructionb) a person whose job is building things, esp. houses
3) Architecturec) the careful study of the structure and behaviour of the physical

4) Buildingd) the art and practice of designing and making buildings
5) Skille) a person who plans new buildings and is responsible for makingsure that they are built properly
6) Architectf) a structure with walls and a roof, such as a house or factory
7) Builderg) an ability to do an activity or job well, especially because you havepracticed it

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.— Екатеринбур: 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.F., 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 №51.

Тема 51. Architectural Planning / Архитектурное планирование.

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. **hindrance, n**–помеха, препятствие;
2. **to repel, v** –отражать;
3. **moisture, n** –влажность;
4. **to foresee, v** – предвидеть;
5. **earthquake, n** – землетрясение;
6. **flood, n** –наводнение;
7. **arrangement, n** –распределение;
8. **axis, n** –ось;
9. **device, n** – средство;
10. **disadvantage, n** –недостаток;
11. **to influence, v** – влиять;
12. **to modify, v** –видоизменять;
13. **to withstand, v** – противостоять;
14. **mold, n** – (зд.).плесень;
15. **resistance, n** – сопротивление;
16. **extreme, n** – крайняястепень;
17. **to penetrate, v** – проникать;
18. **patron, n** – клиент, заказчик;
19. **sacristy, n** – ризница;
20. **ambulatory, n**– крытаявнутренняягалерея;
21. **commodity, n** – предметыпотребления;

Text: “Architectural Planning”. The architect usually begins to work when the site type and cost of a buildinghave been determined.**Planning the environment**. The natural environment is at once a hindrance and ahelp, and the architect seeks both to invite its aid and to repel its attack. To makebuildings habitable and comfortable, he must control the effects of heat, cold, light, air, moisture, and dryness and foresee destructive potentialities such as fire, earthquake,flood.The placement and form of buildings in relation to their sites, the distribution ofspaces within buildings, and other planning devices discussed below are fundamental elements in the aesthetics

of architecture.**Orientation**. The arrangement of the axes of buildings and their parts is a devicefor controlling the effects of sun, wind, and rainfall.Within buildings, the axis and placement of each space determine the amount ofsun it receives. Orientation may control air for circulation and reduce the disadvantages of wind, rain, and snow.The characteristics of the immediate environment also influence orientation:trees, land formation, and other buildings create shade and reduce or intensify wind,while bodies of water produce moisture and reflect the sun.**Architectural forms**. Planning may control the environment by the design ofarchitectural forms that may modify the effects of natural forces.

Color. Color has a practical planning function as well as an expressive qualitybecause of the range of its reflection and its absorption of solar rays. Since light colors reflect heat and dark colors absorb it, the choice of materials and pigments is an effective tool of environmental control.

Materials and techniques. The choice of materials is conditioned by their ownability to withstand the environment as well as by properties that make them useful to human beings. One of the architect's jobs is to find a successful solution to bothconditions; to balance the physical and economic advantages of wood against thepossibility of fire, termites, and mold, the weather resistance of glass and light metals against their high thermal conductivity, and many similar conflicts.

Interior control. The control of the environment through the design of the planand the outer shell of a building can't be complete, since extremes of heat and cold,light, and sounds penetrate into the interior, where they can be further modified by the planning of spaces and by special conditioning devices.Temperature, light and sound are all subject to control by the size and shape ofinterior spaces, the way in which the spaces are connected, and the materials employed for floors, walls, ceilings, and furnishings.Today, heating, insulation, air conditioning, lighting, and acoustical methodshave become basic parts of the architectural program.

Differentiation. The number of functions requiring distinct kinds of space withina building depends not only upon the type of building but also upon the requirements of the culture and the habits and activities of the individual patrons. A primitive house has a single room with a hearth area, and modern one has a separate areas for cooking,eating, sleeping, washing, storage, recreation.

Economic planning. Major expenses in building are land, materials, and labor. Ineach case they are high when the commodity is scarce and low when it is abundant, and they influence planning more directly when they become restrictive.When land coverage is limited, it is usually necessary to design in height thespace that otherwise would be planned in breadth and depth, as in the ancient Roman insula (apartment houses) or the modern skyscraper. When the choice of materials is influenced by cost, all phases of architectural design are affected, since the planning procedure, the technique, and the form of buildings are dependent on materials. High labor cost influence the choice of techniques and, consequently, of materials.

Вопросыизадания.

Exercise 1. Choose the right word.

1. The placement and form of buildings in relation to their … is one of the fundamental elements in the aesthetics of architecture.

a) square b) comfort c) sites

2. The arrangement of the … of buildings and their parts controls the effects of sun wind, and rainfall.

a) rooms b) axes c) spaces

3.The characteristics of the immediate … also influence orientation.

a) environment b) territory c) building

4. Color has practical planning … and expressive quality.

a) choice b) feature c) function

5. Planning for use is concerned with convenience of … and rest.

a) movement b) parts c) requirements
6. Major expenses in building are for … , materials, and labor.
a) habits b) land c) phase

Exercise 2. Match the words from two columns.

1. hindrance a. видоизменять
2. to withstand b. ось
3. patron c. противостоять
4. disadvantage d. влиять
5. modify e. помеха
6. to influence f. заказчик
7. axis g. недостаток

Exercise 3. Put the verbs in brackets in the correct tense.

1. The architect usually … (begin) to work when the site type and cost of a building have been determined. **2.** The natural environment is at once a hindrance and a help, and the architect … (seek) both to invite its aid and to repel its attack. **3.** Orientation may … (control) air for circulation and reduce the disadvantages of wind, rain, and snow. **4.** The choice of materials … (be) conditioned by their own ability to withstand the environment as well as by properties that make them useful to human beings. **5.** Temperature, light and sound … (be) all subject to control by the size and shape of interior spaces, the way in which the spaces are connected, and the materials employed for floors, walls, ceilings, and furnishings. **6.** Major expenses in building … (be) land, materials, and labor.

Exercise 4. GivetheEnglishequivalents.

Отразить атаку; пригодный для жилья; расположение; положение;результаты воздействия солнца, ветра и дождя; создавать влажность иотражать солнце; важное (эффективное) средство контроля; выбор материаловдля строительства; способность противостоять воздействиям окружающейсреды; отопление, изоляция, кондиционирование воздуха, освещение,акустические методы; функциональное планирование; расходы; влиять навыбор материалов; зависеть от требований заказчика.

Exercise 5. Answer the questions.1. When does the architect begin to work on the project?
2. What are the main aspects of architectural planning?
3. What are the fundamental elements in the aesthetics of architecture?
4. What must the architect control to make buildings habitable and comfortable?
5. What is the planning for use concerned with?
6. What are the major expenses in building?

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.— Екатеринбур:

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.F., 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 №52.

Тема 52. ArchitectureofAncientTimes / Архитектура древнейших времён.

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

Теоретическаячасть:

Vocabulary:

Craftsman	large-scale
Funerary	divinity
post-and-lintel	prosperous
corbel vault	excellence
vaulting	refinement
capital	ремесленник
steeply battered pylon	погребальный, траурный
incised relief	стоечно-балочная
feature	ложный свод
outstanding	свод; возведение свода
spectacular	капитель

сильно суженный кверху пилон	крупномасштабный
резной рельефный орнамент	божество
черта, свойство; отличаться	процветающий
выдающийся	высокое качество, мастерство
эффектный, захватывающий	усовершенствование
durable	прочный, долговечный
blossoming	расцвет
encouragement	поощрение
mortuary	погребальный
pillar	столб, колонна, пилон
ramp	скат, уклон, наклонная плоскость
successor	последователь, наследник

The architecture of Egypt developed from the 3rd millennium B.C. to the Romanperiod. During this period artist and craftsmen were drawn to the court to work under thepatronage of the King and his great nobles. Techniques of the working in stone, wood andmetal made tremendous progress. The most outstanding achievements of this period aremassive funerary monuments and temples build of stone for permanence, featuring onlypost-and lintel construction, corbel vaults without arches or vaulting, and pyramids. Thisarchitecture gave the world the earliest building in dressed stone, invented the column,capital and cornice. Features characteristic of the ancient Egyptian architecture alsoinclude the obelisk, the steeply battered pylon, the symbolical lotus column, and incisedrelief decoration without any structural relevance.The pyramids of the Old Kingdom, majestically planted on the desert edge, are themost spectacular of all funerary works and the only remained wonder of the world. Theworld's first large-scale monument in stone is Zoser's necropolis at Sahara, built it 2766B.C. by the Imhotep, the earliest named architect. These monuments celebrated thedivinity of the kings of Egypt, linking the people with the great gods of earth and sky.During the prosperous period, know as the Middle Kingdom fortresses were built to
defend the southern and eastern borders. Craftsmen achieved new levels of excellence.Very little architecture remains, but what has survived shows great simplicity andrefinement, less durable materials were used. The example is the pyramid of Sesostris I atLisht.Great buildings began to be erected once again in the New Kingdom(1570-1085B.C.), marking new blossoming of the arts and crafts of ancient Egypt. The kings gaveencouragement to artists and craftsmen by ordering great temples and palaces to be builtthroughout Egypt. The temple walls were covered with reliefs celebrating theachievements of the Icings and the power of the gods. The most notable monuments arethe Mortuary Temple of Queen Hatsheput (the only woman -pharaoh) at Deir el Bahari,with its pillared halls, colonnades, and gigantic ramps connecting the different levels; themagnificent Great Temple at Karnak devoted to Amon as the universal god of Egypt.The final revival took place under the rule of the Ptolemies, the successors ofAlexander the great, who built numerous temples of traditional style but slightly moreelegant and less crushingly inhuman. The finest examples that survive are the Temple ofHorus at Eftu and the temples on the islands of Philae.

Вопросыизадания.

Exercise 1. Find proper Russian words with the same roots as the following English words:

Egypt, period, patronage, technique, metal, progress, massive, monument, construction,arch, pyramids, column, cornice, characteristic, obelisk, symbolical, material, relief,colonnade, universal, traditional, style, elegant, gigantic

Exercise 2. Find the English equivalents for the following Russian words:

Астоечно-балочнаяконструкция; поощрение; колонна; высокоемастерство; скат;сильносуженныйкверхупилон; траурный; ложныйсвод; резнойрельефныйорнамент; воздвигать; божество; выдающийся; последователь; уцелеть; возрождать

Bdivinity; pillar; to revive; post-and-lintel construction; to survive; corbel vault;excellence; outstanding; ramp; encouragement; to erect; successor; incised relief;funerary; steeply; buttered pylon

Exercise 3. Find the false sentences using the information from the text. Correct thefalse sentences:

1) Techniques of working in reinforced concrete made tremendous progress.
2) The architecture of Egypt gave the world the column, capital and cornice.
3) The world's first large-scale monument in stone is the pyramid of Sesostris I at Lisht.
4) Many architectural monuments of the Middle Kingdom can be seen nowadays.
5) New blossoming of the arts and crafts of ancient Egypt began in the New Kingdom.

Exercise 4. Answer the following questions:

1) When did the old ancient Egyptian architecture develop?
2) Into what period could it be classified?
3) What typical structures did the architecture of Egypt produce?
4) What system of construction was used in Ancient Egypt?
5) What elements did this architecture invert?
6) What is the only remained wonder of the world?
7) Who was the earliest named architect?
8) How do the structures of the Old, Middle and New Kingdoms differ?
9) When did the final revival of ancient Egyptian architecture take place?

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.— Екатеринбур: 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.F., 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

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Практическое занятие №53.
Тема 53Orders of Architecture/Современная 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:

Vocabulary:
1. **replacement, n** – [rI'pleismqnt] замена
2. **pillar, n** – ['pIlq] столб, колонна, опора
3. **carpentry** плотничное дело
4. **order** ордер
5. **entablature** антаблемент
6. **Doric order** дорический ордер
7. **Ionic order** ионический ордер
8. **Corinthian order** коринфский ордер
9. **Tuscan order** тосканский ордер
10. **Compositeorder**композитный, сложный ордер
11. **eventually, adv**– [I'ventjuqlI] вконцеконцов
12. **arrangement, n** –[q'reInGmqnt] расположение
13. **to define, v** – [dI'faIn] определять
14.**pattern, n**– ['pxtqn] модель, образец
15. **capital**капитель
16. **frieze**фриз
17. **shell, n**– [Sel] оболочка, каркас
18. **spreading** – [spredIN] распространяющийся
19. **to evolve, v** – [I'vOlv] развиваться
20. **intimation, n**– ["Inti'meIS(q)n] указание, сообщение, намек
21. **elaborately**– [I'lxb(q)rItlI] тщательно (разрабатывать)
22. **tocarve, v**– ['kRv] резать, вырезать
23. **hoop, n**– [hHp] обруч
24. **volute**волюта; завиток (архитектурная
особенность ионического стиля)

25. **fussy, a**– ['fAsI] вычурный
26. **toexceed, v**– [Ik'sJd] превышать, превосходить
27. **successive**последующий, следующий
28. **acanthus**акант (орнамент)
29. **corner, n**– ['kLnq] угол
30. **cornice**карниз; свес
31. **mutules**мутулы, модильоныдорическогоордена

The first step in architecture was simply the replacement of wooden pillars withstone ones, and the translation of the carpentry and brick structural forms into stoneequivalents. This provided an opportunity for the expression of proportion and pattern.This expression eventually took the form of the invention or evolution of the stone“orders” of architecture. These orders, or arrangements of specific types of columnssupporting an upper section called an entablature, defined the pattern of the columnarfacades and upper works that formed the basic decorative shell of building.

The Greeks invented the Doric, Ionic, and Corinthian orders. The Romans addedthe Tuscan and the Composite.The oldest order, the Doric, is subdivided into Greek Doric and Roman Doric.The first is the simplest and has baseless columns as those of the Parthenon. RomanDoric has a base and is less massive.The parts of Greek Doric – the simplest, baseless columns, the spreading capitals,and frieze above the columns – constitute an aesthetic development in stoneincorporating variants on themes used functionally in earlier wood and brickconstruction. Doric long remained the favourite order of the Greek mainland andwestern colonies, and it changed little throughout its history.The Ionic order evolved later, in eastern Greece. About 600 BC, in Asia Minor,the first intimation of the style appeared in stone columns with capitals elaboratelycarved in floral hoops – an Orientalizing pattern familiar mainly on smaller objects andfurniture and enlarged for architecture.It developed throughout so called Aeolic capital with vertically springing volutesor spiral ornaments to the familiar ionic capital, the volutes of which spread horizontallyfrom the centre and curl downward. The order was always fussier and more ornate, lessstereotyped than Doric. The Ionic temples of the 6th century exceed in size anddecoration even the most ambitious of their Classical successors. Such were the templesof Artemis at Ephesus in Asia Minor and the successive temples of Hera on the islandof Samos.The Corinthian order originated in the 5th century BC in Athens. It had Ioniccapital elaborated with acanthus leaves. In its general proportions it is very like theIonic. For the first time the Corinthian order was used for temple exteriors. Because ofits advantage of facing equally in four directions it was more adaptable than Ionic forcorners. There are not many Greek examples of the Corinthian order. The Romanswidely used it for its showiness. The earliest known instance of the Corinthian orderused on the exterior is the choragic monument of Lysicrates in Athens, 335/334 BC.A simplified version of the Roman Doric is the Tuscan order. It has a lessdecorated frieze and no mutules in the cornice.The Composite order is also a late Roman invention. It combines the elementsfrom all the Greek orders.

Вопросыизадания:

Exercise 1. Form the comparative and superlative degrees from the followingadjectives and adverbs: Large, big, far, early, new, much, simple, good, small, little, easy, high, many, low,well, wide, badly, durable, massive, old, elegant, notable, outstanding.

Exercise 2. Choose the correct word from the two words given in brackets.1. The Greeks … (invented; placed) the Doric, Ionic, and Corinthian orders. **2.** The… (oldest; youngest) order, the Doric, is subdivided into Greek Doric and RomanDoric. **3.** Roman Doric … (have; has) a base and is less massive. **4.** For the first timethe Corinthian order was used for … (theatres; temples). **5.** The Ionic was alwaysfussier than … (the Doric; the Tuscan).

Exercise 3. Choose the right term.

1. The upper section of a classical order is a/an

a) volute b) entablature c) base
2. Spiral ornaments are called …
a) capitals b) mutules c) volutes
3) The part of the column is
a) frieze b) capital c) cornice
4) A particular style of column with its entablature having standardized details is
a) façade b) colonnade c) order

Exercise 4. Match the words and their definitions.

1. Step ~ a model for use in making things
2. Pattern ~ a stage in a process
3. Arrangement ~ to develop gradually
4. Subdivide ~ putting in a specific order
5. Invention ~ to divide into smaller parts
6. Evolve ~ a new method, process, or device

Exercise 5. Find the sentences in the Present Simple and Past Simple Tenses in the text.

Exercise 6. Fill in the gaps.

The Greeks … (invent) the Doric, Ionic, and Corinthian orders. **2.** The Romans …(add) the Tuscan and the Composite. **3.** The oldest order, the Doric, … (be)subdivided into Greek Doric and Roman Doric. **4.** Roman Doric has a base and …(be) less massive. **5.** The Ionic order … (evolve) later, in eastern Greece. **6.** There …(be) not many Greek examples of the Corinthian order. **7.** A simplified version of theRoman Doric … (be) the Tuscan order.

Exercise 7. True or false.

a) the first step in architecture was simply the replacement of wooden pillars with
b) stone ones.
c) the Greeks invented Tuscan and Composite orders.
d) the oldest order, the Doric, is subdivided into Greek Doric and Roman Doric.
e) Roman Doric has no base.
f) the Ionic order was evolved later, in eastern Greece.

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.— Екатеринбур: 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.F., 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

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Практическое занятие №54.

Тема 54. British Architecture / Британская 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:

Vocabulary:

limestone	известняк
rude	примитивный, грубый
primordial	исконный, первобытный
sanctuary	святилище
juxtaposition	наложение, сопоставление
slab	плита
prop	подпорка, опора, стойка
precarious	непрочный, ненадёжный
invasion	вторжение, нашествие
clay	глина
hut	хижина
timber	лесоматериалы
hearth	домашний очаг
beam	балка
auxiliary	вспомогательный
shed	сарай
barn	амбар

Text

British Architecture in the Period of Ancient History

British architecture passed several main stages in its development. It is closelyconnected with the history of the country.As far as historical research could establish, the first inhabitants of the British Isleswere nomadic Stone Age hunters. They lived probably in the dry caves of limestone andchalk hills.An Alpine race came to the British Isles about 1700 B.C.A characteristic monument of this civilization, primordially rude and primordiallymajestic, is the so-called Stonehenge, a sort sanctuary erected on Salisbury Plain about1100 B.C. or some-what earlier. This circular structure was formed by a merejuxtaposition of tall horizontal slabs, capping those perpendicular props for all the worldlike houses built by infant architects reckless enough to disregard the seemingly precariousbalance of the hanging stones-whence the name of the structure, the "Hanging Stones",Stonehenge.During the invasion of Celts tribes (8-th-Is' cc B.C.) fortresses were built onhilltops; towns began to appear in the more wealthy south-east, true they were at first nomore than large groups of wattle-and-clay houses enriched by a sort of fortificated fence.The invasion by the Romans (lc. B.C.-5c. A.D.) brought the country into contactwith the Roman civilization. Major systems of fortifications were constructed as adefense.Then came the occupation of the country by Anglo-Saxon tribes. The Anglo-Saxonhad no big cities, only scattered villages and townships, that is, arrangements of the lord's
house with the wattle-and-mud huts of the villagers grouped round it. The huts wereprimitive affairs, of wood and clay while timber was abundant with no chimney over theopen hearth but a hole in the roof to let the smoke out and to let the light in. The hearthwas usually nothing more complicated than just a large flat stone in the middle of theearthen floor. Much of the smoke supposed to escape through the hole in the roofremained in the low-roofed hut and blackened the beams of the roof with soot. The wallswere bare; the narrow holes cut them to admit light, admitted much of the wind and thecold as well.The lord's house had a large yard where much of the housekeeping work was donewith lots of auxiliary buildings like sheds and barns and the like inside it. It was protectedby a stout fence supplemented by a sort of circular fortification, or mound. The interiorarrangements were characteristic: there was always a spacious hall where most of thefamily's social life was spent, where the lord had his meals with his family and his guests.The light came through narrow holes in the walls covered with oiled linen. The walls werehung with coarse but bright-patterned curtains, though quite often it was only the part ofthe hall allotted for the master of house and his most honoured guests that was thusdecorated, the rest of the walls being bare. The hearth was nothing much more elaboratethat a flat broad stone and the blackened roof beams were just as much the feature of thelord's hall as they were of the humble dwelling.

Вопросыизадания.

1. Read the following word combinations and translate them intoRussian:

To pass several stages; to be closely connected with the history; the first inhabitantcaves of limestone; to form by a mere juxtaposition of slabs; perpendicular props; architects; precarious balance of the hanging stones; wattle-and-clay houses; fence; to bring into contact; major systems of fortification; scattered villages andtownships; open hearth; in the middle of the earthen floor; low-roofed huts; to beprotected by a stout fence; to cover with oiled linen; bright-patterned curtains; hall allotted for the master of house; flat broad stone; humble dwelling;

2. Find the false sentences using the information from the text.

«Correct thefalse sentences:

1) The first inhabitants of the British Isles lived in the dry caves.
2) Towns appeared first in the wealthier north-east.
3) During the Roman invasion no fortifications were constructed.
4) There were no big cities during the Anglo-Saxon period.
5) The huts of the villagers were made of wattle and clay.

6) The light came through wide windows.
7) The walls of the lord's house were painted.

3. Answer the following questions:
1) Where did the first inhabitants of the British Isles live?
2) What sort of monument it the so-called Stonehenge?
3) When did the first towns begin to appear?
4) How did the dwellings of the villagers look like?
5) What were the interior arrangements of the lord's house?

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.— Екатеринбур: 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.F., 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

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Практическое занятие №55.
Тема 55. RussianArchitecture / 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:

belltower	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.
Вопросыизадания:
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
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.— Екатеринбур: 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.F., 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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- http://www.catalog.ncstu.ru

Практическое занятие №56.

Тема 56FamousArchitects / Знаменитые архитекторы.

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:

evidence	доказательство, подтверждение
exact	точный
authorship	авторство
authentic	подлинный, достоверный
spirit	дух
vigour	сила, энергия
refined	утонченный, изысканный
courage	мужество
enormous	огромный
scarcity	недостаток; редкость
deviser	изобретатель
obvious	очевидный, явный
surveyor	зд.: руководитель строительных работ
decay	разрушение, распад
scheme	план, проект
entire	целый; сплошной; полный
spacious	просторный, обширный
equal	равный
quire	место хора(в соборе)
molding	лепноеукрашение, карниз
discreet	

Inigo Jones and Christopher Wren are the greatest English architects to date.

Inigo Jones' (1573 – 1652) early years are traditionally associated with a number of neo-classic buildings, but there is no exact evidence of his authorship.

His first authentic building, and also his finest, was the Banqueting Hall in Whitehall intended to form part of ambitious royal palace. The design of Inigo Jones for Whitehall Palace (1638) and Queen's Chapel (1623) in London introduced English patrons to the prevailing architectural ideas of northern Italy in the late 16th- architects such as Palladio, Serlio, and Vincenzo Scramozzi, Jones approached the Baroque spirit in his works by unifying them with a refined compositional vigour.

Queen's House is an Italian villa sympathetically reinterpreted. The upper floor loggia is very Palladian, as is also the two-armed, curved open staircase to the terrace. The proportions and the general effect are long and low and very un-Italian. It must have required considerable courage on the part of the architect to break with established tradition. It is small wonder that the influence of Inigo Jones was enormous despite the scarcity of his recorded works. It is said that Inigo Jones is to architecture what Shakespeare is to literature.

The chief task of the architect is to create buildings of character; this implies that the architect should be an artist as well as a deviser of construction. The true greatness as an artist and constructor is revealed in the works of another famous English architect Sir Christopher Wren.

The period of Wren's activity as an architect covers the last forty years of the seventeenth century and extends for twenty years into eighteenth. Wren was born in the quiet Wiltshire village of East Kroyle. He was the son of the rector who was late to become Dean of Windsor. He was educated at Wensminster School and Wadham

College, Oxford. His genius was obvious even in childhood, though then it was turned more to the problems of mathematics and astronomy.
In 1657, when Wren was 25, he was appointed Professor of Astronomy at
Grasham College in London. His spectacular talents quickly came to notice of Charles
II and in 1660 Wren was appointed assistant to the Surveyor General. To tell the truth,
Wren never trained as an architect. His architectural career proper began under family patronage. His uncle commissioned him to design a couple of buildings at Cambridge (Pembroke College Chapel) and Oxford (Sheldonian Theatre). They are moderately successful and, at any rate, still stand. Wren's interest in architecture was revealed after his visit to Paris in 1665 On his return to England he was asked by the King to produce plans for the restoration of old St. Paul's which was in a state of decay. But the Great Fire of 1666 put an end to the possibilities of restoring the old cathedral. The Great Fire also gave Wren the opportunity to suggest two grandiose schemes: the rebuilding of the entire commercial heart of London to a spacious master plan with wide street, huge piazzas and long perspectives and the rebuilding of St.Paul's. This first scheme failed because of the powerful influence of speculators and the second scheme was rejected by the church authorities as Wren suggested a Romanesquechurch dominated by a large rotunda covered by a dome. He wanted to make the cathedral in the shape of the so-called Greek cross with equal arms. This church would be far from the standards of usual Gothic church with quire, nave and aisles in theform of a cross with three short arms and one long arm. Wren was asked to make another plan which would include these traditional elements. This second plan was approved.
By 1666 Christopher Wren was appointed Surveyor General. It took much
time of the architect. The colossal task of demolishing the old cathedral continued for
6 years. In November 1675 the rebuilding of St.Paul's began. It was to go on for about
40 years.
Architecture, first and last and all the time, is proportion. Wren's proportions – in his columns, his moldings, his decorations – all have delicacy. They are well-bred, well-mannered and discreet. His dome when he built it, was the thitd largest in the world. Yet such was Wren's genius that he managed to give it an air of modesty.
Wren's greatest achievement, St.Paul's Cathedral, London (1675 – 1711), owes much to French and Italian examples of the Baroque period; but the plan shows a remarkable adaptation of the traditional English cathedral plan to Baroque spatial uses.
Wren is also notable for his design of about 50 city buildings, marvelous for their beauty; Greenwich Observatory; Hampton Court Palace; Greenwich Hospital;
Kensington Palace – the Grangery; Windsor Town Hall and others.
Wren died in 1723 He lies buried in St.Paul's. His tomb is aplain slab of stone on which is written: "If you seek his monument, look around you".

Вопросыизадания:

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

1) Jones' early years are associated with gothic buildings.
2) Jones' first authentic building was Queen's Chapel in London.
3) Jones greatly influenced the development of the English architecture.
4) Christopher Wren lived and worked in the 16th century.
5) Wren's genius was obvious even in childhood.
6) Wren studied architecture at Grasham College.
7) Wren prepared designs for restoring the St.Paul's.
8) Wren's first scheme was too advanced to meet with approval.
9) Christopher Wren presented English Rococo.

Exercise.2 Complete the following sentences:

1) At the early stage of his creative activity Jones worked in … style.

a) gothic
b) neo-classic
c) rococo
2) Inigo Jones was heavily influenced by … architects.
a) Italian
b) Greek
c) Scandinavian
3) Wren's creative activity began in the … .
a) first half of the 18th century
b) second half of the 17th century
c) first half of the 17th century
4) At the age of 25 Wren was appointed … .
a) assistant to the Surveyor General
b) Surveyor General
c) Professor of Astronomy
5) St.Paul's exhibits a brilliant example of English … .
a) Baroque
b) Gothic
c) Classicism
6) The rebuilding of St.Paul's was to go on for about … .
a) 4 years
b) 14 years
c) 40 years
7) Architecture is first of all … .
a) decoration
b) proportion
c) perspective

Exercise 3 Answer the following questions:

1) What are Jones' early years associated with?
2) What is Jones' first authentic and finest building?
3) What is the period of Wren's creative activity?
4) Why is Wren considered to be a versatile man?
5) Why wasn't Wren's first design for rebuilding St.Paul's met with approval?
6) How can we appreciate St.Paul's cathedral?
7). what buildings were designed by Wren?

Exercise 4. Find English equivalents for the following Russian words:

Аподлинный; огромный; подразумевать; требовать; утонченный; точный; потерпетьнеудачу; бытьобязанным; просторный; изумительный; обнаруживать; сдержанный; выдающийся; устанавливать; равный

B notable; spacious; to fail; to establish; authentic; to imply; to owe; refined; Enormous; to reveal; to require; discreet; exact; marvelous; equal

Рекомендуемая литература.

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ОГУ, 2013. – 116 с.

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- http://www.biblioclub.ru
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