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Пятигорский институт (филиал) СКФУ

**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ  
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ ОБРАЗОВАТЕЛЬНОЕ  
УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ**

**УТВЕРЖДАЮ**

Директор Пятигорского института  
(филиал) СКФУ

\_\_\_\_\_ Т.А. Шебзухова  
«\_\_» \_\_\_\_\_ 20\_\_ г.

**ФОНД ОЦЕНОЧНЫХ СРЕДСТВ**

для проведения текущего контроля успеваемости и промежуточной аттестации

**(ЭЛЕКТРОННЫЙ ДОКУМЕНТ)**

По дисциплине

Направление подготовки/ специальность

Квалификация выпускника

Форма обучения

Год начала обучения

Изучается в 5,6,7 семестрах

Иностранный язык в профессиональной сфере

09.03.02 Информационные системы и технологии/

Информационные системы и технологии

Бакалавр

очная

2021 г.

## Предисловие

1. Назначение: контроль уровня сформированности компетенции УК-4, как средства, позволяющего обеспечить коммуникативно-познавательные потребности в сферах академической, профессиональной и социально-гуманитарной деятельности.

2. Фонд оценочных средств текущего контроля успеваемости и промежуточной аттестации разработан на основе рабочей программы дисциплины «Иностранный язык в профессиональной сфере» в соответствии с образовательной программой высшего образования по направлению подготовки 09.03.02 Информационные системы и технологии, утвержденной на заседании Учебно-методического совета СКФУ, протокол № \_\_\_\_ от « \_\_\_\_ » \_\_\_\_\_ 20 \_\_\_\_ г.

3. Разработчик: доцент кафедры лингвистики и межкультурной коммуникации – Е.М. Шевенко.

4. ФОС рассмотрен и утвержден на заседании кафедры лингвистики и межкультурной коммуникации, протокол № \_\_\_\_ от « \_\_\_\_ » \_\_\_\_\_ 20 \_\_\_\_ г.

5. ФОС согласован с выпускающей кафедрой СУиИТ, протокол № \_\_\_\_ от « \_\_\_\_ » \_\_\_\_\_ 20 \_\_\_\_ г.

6. Проведена экспертиза ФОС. Члены экспертной группы, проводившие внутреннюю экспертизу:

|                     |                                       |
|---------------------|---------------------------------------|
| Председатель: _____ | Н.Ю. Климова, и.о. зав. кафедрой ЛиМК |
| _____               | Т.В. Мухортова, доцент кафедры ЛиМК   |
| _____               | И.М. Першин, зав. кафедрой СУиИТ      |

Экспертное заключение: Фонд оценочных средств для проведения текущей успеваемости и промежуточной аттестации по дисциплине «Иностранный язык в профессиональной сфере» соответствует требованиям ФГОС ВО, рабочей программе по направлению подготовки 09.03.02 Информационные системы и технологии и может быть использован в образовательном процессе.

« \_\_\_\_ » \_\_\_\_\_ 2020 г.

\_\_\_\_\_ Н.Ю. Климова

7. Срок действия ФОС: 1 год

## Паспорт фонда оценочных средств

### для проведения текущего контроля и промежуточной аттестации

|                          |  |
|--------------------------|--|
| Направление подготовки   | 09.03.02 Информационные системы и технологии |
| Направленность (профиль) | Информационные системы и технологии          |
| Квалификация выпускника  | бакалавр                                     |
| Форма обучения           | очная  |
| Год начала обучения      | 2021   |
| Изучается в              | 5, 6, 7 семестрах                            |

| Код оцениваемой компетенции | Этап формирования компетенции (№ темы) | Средства и технологии оценки      | Вид контроля, аттестация (текущий/промежуточный) | Тип контроля (устный, письменный или с использованием технических средств) | Наименование оценочного средства | Количество заданий для каждого уровня, шт. |            |
|-----------------------------|--|-----------------------------------|--|--|----------------------------------|--|------------|
|                             |  |                                   |  |  |                                  | Базовый                                    | Повышенный |
| УК-4                        | 1-52                                   | собеседование                     | текущий  | устный   | Вопросы для собеседования        | 36   | 72         |
| УК-4                        | 1-52                                   | индивидуальные творческие задания | текущий  | устный   | Темы индивидуальных заданий      | 6  |            |

Составитель: \_\_\_\_\_ Е.М. Шевченко

« \_\_\_\_ » \_\_\_\_\_ 2021 г.

**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ**  
**Федеральное государственное автономное образовательное учреждение**  
**высшего образования**  
**«СЕВЕРО-КАВКАЗСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ»**  
**Институт сервиса, туризма и дизайна (филиал) СКФУ в г. Пятигорске**

**УТВЕРЖДАЮ:**  
И. о. зав. кафедрой ЛиМК  
\_\_\_\_\_  
Н.Ю. Климова  
«\_\_\_\_» \_\_\_\_\_ 2021 г.

**Вопросы для собеседования**  
**по дисциплине «Иностранный язык в профессиональной сфере»**  
**Базовый уровень**

**Тема 1, 19. / Computer Literacy / Компьютерная грамотность**

1. What does "a computer-literate person" mean?
2. Are you aware of the potential of computers to influence your life?

**Тема 2, 21. Application of Computers / Применение компьютеров**

1. What is a computer?
2. What are the two possible states of the switches?

**Тема 3, 24. Development of Electronics / Развитие электроники**

1. What is electronics?
2. Can you imagine modern life without electronics?

**Тема 4, 26. The First Calculating Devices / Первые вычислительные машины**

1. What was the very first calculating device?
2. What is the abacus?

**Тема 5, 28. Data Processing Concepts / Концепции обработки данных**

1. What is processing?
2. What is data processing?

**Тема 6, 30. Computer System Architecture / Структура компьютерной системы**

1. Who designs computers and their accessory equipment?
2. What is the role of an analyst?

**Тема 7, 32. Functional Units of Digital Computers/ Функциональные блоки компьютера**

1. What represents the functional organization of a computer?
2. What can we get by studying the functional organization?

**Тема 8, 35. Storage Units / Единицы хранения информации**

1. What are the functional units of a digital computer?
2. What units make up the central processing unit?

**Тема 9, 37. Central Processing Unit / Центральный процессор**

1. What words in computer science are used interchangeably and why?
2. What components make up the heart of the computer system.

**Тема 10, 39. Input-Output Environment / Режим работы устройств ввода-вывода**

1. What is the purpose of input and output devices?
2. What types of input-output devices do you know?

**Тема 11, 41. Input Devices / Устройства ввода информации**

1. What devices are used for inputting information into the computer?
2. What was the most common device in early personal computers?

**Тема 12, 43. Output Devices. Printers / Устройства вывода информации. Принтеры**

1. What are the three types of printers?
2. What is a letter-quality printer?

**Тема 13, 45. Personal Computers / Персональные компьютеры**

1. When did the first personal computer appear?

2. What was one of the first PC model?

**Тема 14, 47. What is Programming? / Что такое программирование?**

1. What is programming?

2. What is the essence of programming?

**Тема 15, 50. Programming Languages / Языки программирования**

1. What is the process of writing instructions called?

2. What is a code?

**Тема 16, 53. The Internet / Интернет**

1. What programming languages do you know?

2. What is WWW?

**Повышенный уровень**

**Тема 1, 19. / Computer Literacy / Компьютерная грамотность**

1. What does "a computer-literate person" mean?

2. Are you aware of the potential of computers to influence your life?

3. What do the people mean by "the basics"?

4. What is the role of computers in our society?

**Тема 2, 21. Application of Computers / Применение компьютеров**

1. What is a computer?

2. What are the two possible states of the switches?

3. What are the main functions of a computer?

4. In what way can we make the computer do what we want?

**Тема 3, 24. Development of Electronics / Развитие электроники**

1. What is electronics?

2. Can you imagine modern life without electronics?

3. Where are electronic devices used?

4. What was the beginning of electronics development?

**Тема 4, 26. The First Calculating Devices / Первые вычислительные машины**

1. What was the very first calculating device?

2. What is the abacus?

3. What is the modern slide rule?

4. Who gave the ideas for producing logarithm tables?

**Тема 5, 28. Data Processing Concepts / Концепции обработки данных**

1. What is processing?

2. What is data processing?

3. What does the term of data processing system mean?

4. What basic operations does a data processing system include?

**Тема 6, 30. Computer System Architecture / Структура компьютерной системы**

1. Who designs computers and their accessory equipment?

2. What is the role of an analyst?

3. Is it necessary for a user to become a computer system architect?

4. What functions do computer systems perform?

**Тема 7, 32. Functional Units of Digital Computers/ Функциональные блоки компьютера**

1. What represents the functional organization of a computer?

2. What can we get by studying the functional organization?

3. What is the function of the input device?

4. What does memory serve for?

**Тема 8, 35. Storage Units / Единицы хранения информации**

1. What are the functional units of a digital computer?

2. What units make up the central processing unit?

3. How is computer system organized?

4. What are the two main types of storage units?

**Тема 9, 37. Central Processing Unit / Центральный процессор**

1. What words in computer science are used interchangeably and why?

2. What components make up the heart of the computer system.

3. What is the function of the CPU?

4. In what way does the CPU control the operation of the whole system?

**Тема 10, 39. Input-Output Environment / Режим работы устройств ввода-вывода**

1. What is the purpose of input and output devices?

2. What types of input-output devices do you know?

3. Why are data transformed into a binary code while entering the input device?

4. Give an example of a human independent output.

**Тема 11, 41. Input Devices / Устройства ввода информации**

1. What devices are used for inputting information into the computer?

2. What was the most common device in early personal computers?

3. What is the function of a keyboard?

4. Why do many users prefer manipulators to keyboard?

**Тема 12, 43. Output Devices. Printers / Устройства вывода информации. Принтеры**

1. What are the three types of printers?

2. What is a letter-quality printer?

3. What is a dot-matrix printer?

4. What type of printer is the most common with microcomputer systems?

**Тема 13, 45. Personal Computers / Персональные компьютеры**

1. When did the first personal computer appear?

2. What was one of the first PC model?

3. What is a personal computer?

4. What are the four main characteristics of a PC?

**Тема 14, 47. What is Programming? / Что такое программирование?**

1. What is programming?

2. What is the essence of programming?

3. What should be done with the problem before processing by the computer?

4. What is a program?

**Тема 15, 50. Programming Languages / Языки программирования**

1. What is the process of writing instructions called?

2. What is a code?

3. How must instructions be written?

4. What is the foundation of any programming language?

**Тема 16, 53. The Internet / Интернет**

1. What programming languages do you know?

2. What is WWW?

3. What is FORTRAN used for? Decode it.

4. What does COBOL serve for? Decode it.

**1. Критерии оценивания компетенций**

**Оценка «отлично»** выставляется студенту, если он отлично знает лексику профессиональной направленности; нормы употребления лексики английского языка в профессиональной сфере; особенности грамматики профессионального английского языка. Отлично умеет осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке; читать и переводить специальную литературу для пополнения профессиональных знаний. Уверенно владеет навыками профессионального общения на английском языке; способами пополнения профессиональных знаний из оригинальных источников на английском языке.

**Оценка «хорошо»** выставляется студенту, если он хорошо знает лексику профессиональной направленности; нормы употребления лексики английского языка в профессиональной сфере; особенности грамматики профессионального английского языка. Хорошо умеет осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке; читать и переводить специальную литературу для пополнения профессиональных знаний. Хорошо владеет навыками профессионального общения на английском языке; способами пополнения профессиональных знаний из оригинальных источников на английском языке.

**Оценка «удовлетворительно»** выставляется студенту, если он частично знает лексику профессиональной направленности; нормы употребления лексики английского языка в профессиональной сфере; особенности грамматики профессионального английского языка. Частично умеет осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке; читать и переводить специальную литературу для пополнения профессиональных знаний. Частично владеет навыками профессионального общения на английском языке; способами пополнения профессиональных знаний из оригинальных источников на английском языке.

**Оценка «неудовлетворительно»** выставляется студенту, если он слабо знает лексику профессиональной направленности; нормы употребления лексики английского языка в профессиональной сфере; особенности грамматики профессионального английского языка. Умеет слабо осуществлять профессиональную коммуникацию в устной и письменной формах на английском языке; читать и переводить специальную литературу для пополнения профессиональных знаний. Слабо владеет навыками профессионального общения на английском языке; способами пополнения профессиональных знаний из оригинальных источников на английском языке.

## 2. Описание шкалы оценивания

Максимально возможный балл за весь текущий контроль устанавливается равным **55**. Текущее контрольное мероприятие считается сданным, если студент получил за него не менее 60% от установленного для этого контроля максимального балла. Рейтинговый балл, выставляемый студенту за текущее контрольное мероприятие, сданное студентом в установленные графиком контрольных мероприятий сроки, определяется следующим образом:

| Уровень выполнения контрольного задания | Рейтинговый балл (в % от максимального балла за контрольное задание) |
|---|--|
| Отличный                                | <b>100</b>   |
| Хороший                                 | <b>80</b>  |
| Удовлетворительный                      | <b>60</b>  |
| Неудовлетворительный                    | <b>0</b>   |

## 3. Методические материалы, определяющие процедуры оценивания знаний, умений, навыков и (или) опыта деятельности, характеризующих этапы формирования компетенций

Процедура проведения данного оценочного мероприятия включает в себя перечень вопросов базового и повышенного уровней для собеседования.

Предлагаемые студенту задания позволяют проверить сформированность компетенций:

УК-4 – способен осуществлять деловую коммуникацию в устной и письменной формах на государственном языке Российской Федерации и иностранном(ых) языке(ах).

Вопросы для собеседования повышенного уровня предполагают более глубокое знание пройденного материала, прочное владение лексикой по темам дисциплины, уверенным знанием грамматики английского языка.

При подготовке к ответу студенту предоставляется право пользоваться подготовленным им конспектом, англо-русским словарем.

При проведении собеседования оцениваются умение вести беседу, грамотность речи, последовательность и рациональность изложения материала.

Составитель \_\_\_\_\_ Е.М. Шевченко

«\_\_\_\_» \_\_\_\_\_ 2020 г.



**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ**  
**Федеральное государственное автономное образовательное учреждение**  
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**«СЕВЕРО-КАВКАЗСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ»**  
**Институт сервиса, туризма и дизайна (филиал) СКФУ в г. Пятигорске**

**УТВЕРЖДАЮ:**

И.о. зав. кафедрой ЛимК

\_\_\_\_\_ Н.Ю. Климова

«\_\_\_\_» \_\_\_\_\_ 2020 г.

**Темы индивидуальных заданий**  
**по дисциплине «Иностранный язык в профессиональной сфере»**  
**Базовый уровень**

**1. Read and translate the text « What is inside a PC system? », give your own definitions to the terms: *motherboard, RAM, CPU, cache memory, processing unit, control unit, DIMM.***

**What is inside a PC system?**

A computer is made up of different components like the motherboard, processor, display, RAM, etc. Each component has to do its own set of jobs in coordination with other components to make the computer work correctly. Let's see what are the internal components of a computer.

**Motherboard**

The basic building block of a computer, whether it's a laptop or a desktop, is a green colored printed circuit board called Motherboard. All the other components are connected to it and use various circuits and interfaces to communicate with each other. For a desktop computer, you only have to open one screw in order to gain access to what is inside the computer. But for a laptop computer, it's tedious and frightening job. Motherboard houses various components like memory slots, sockets, chipset, clock generator, expansion slots, storage connectors, etc.

**Processor**

You might have heard it an uncountable number of times that a processor or a CPU (Central Processing Unit) is the brain of a computer. Often, in the case of desktops, people confuse the CPU with the cabinet. But it's a small chip placed on the socket of the motherboard and is responsible for all the calculations and input/output operations to be done in order to process the data. Modern computers have small-sized CPU chips known as Microprocessors.

A microprocessor houses the two components of a processor, processing unit and the control unit, on a single small IC. Modern microprocessors come as single core or multi-core. A multi-core microprocessor such as the Intel Core i7, have more than one processing units (cores) present on a single chip.

The basic task a processor has to perform can be divided into three categories:

- It gathers the necessary program data to be processed. For this, the data is first shifted from the hard drive to the RAM of the computer then to the CPU.
- The CPU then processes the data on the basis of some rules and regulations, known as Instruction Set, it already knows.

- Finally, the processed data is ready. It then follows the steps the programmer has included in the program. For example, the processed data can be displayed on the screen or saved to the hard drive.

## **Cache**

It is a memory supplement used by the CPU while it's busy with the processing jobs. Cache memory contains the data which is often required by a CPU like the program instructions. It is easier for the CPU access the cache memory first than going for the larger ones. Cache memory is way faster than RAMs and hence it's costlier. So, the size of the cache memory is kept very limited.

The cache memory is present on the CPU chip itself.

Cache memory comes in levels like L1 cache, L2 cache, and L3 cache. The CPU first searches for the required data in L1, then L2, then L3, and L4 if it exists. Finally, if none of the cache memories are able to provide the required data, it will access the RAM. Cache memory is very vital to a computer. A computer with a faster processor and less cache will perform worse than a slower processor with more cache. But this doesn't mean that a 20-year-old processor puffed with excess cache could outperform a present-day processor.

## **RAM**

Random Access Memory is one of the vital parts of a computer. If you take out the RAM chip out of your computer, it won't start. It is faster than the hard drives and is used to store program data which is currently used by the CPU. But RAM suffers from short-term memory loss. What does it mean? It holds data only when it receives power. Once you turn off your computer all the data will be lost. That's the reason it can't be used as a permanent storage solution in a computer.

The RAM chips we use on our laptop and desktops differ in size. The reason is to make the memory chip compact for the laptops. But they have the same functionality and powers. Dynamic RAM integrated circuits, known as Dual-Inline Memory Module (DIMM), are mounted on green colored PCB and then called as DIMM chips. Memory variants like DDR, DDR2, DDR3, DDR4, etc. differ in the number of pin counts they have.

Before DIMMs, SIMMs used to exist. The key difference between the two is the number of pin counts. SIMMs have half the number of pins than DIMMs. However, the number of pins will appear the same if you take a casual look on them. A keen observation would lead to a conclusion that the pins on either side of a SIMM are connected to each other which is not the case with DIMM.

Also, the SIMM supports a 32-bit data bus while DIMM supports 64-bit data bus. This allows the flow of more data in the case of DIMM. The modern 64-bit CPUs would require an installation of two SIMMs chips. A single DIMM would be sufficient for that. Hence, the SIMMs became obsolete with time.

## **2. Read and translate the text « Input and output devices».**

## Input and output devices

An [input device](#) sends information to a computer system for [processing](#), and an [output device](#) reproduces or displays the results of that processing. Input devices *only* allow for input of data to a computer and output devices *only* receive the output of data from another device. Most devices are only input devices or output devices, as they can only accept data input from a user or output data generated by a computer. However, some devices can accept input and display output, and they are referred to as [I/O devices](#) (input/output devices). For example, as you can see in the top half of the image to the right, a keyboard sends electrical signals, which are received by the computer as **input**. Those signals are then interpreted by the computer and displayed, or **output**, on the monitor as text or images. In the lower half of the image, the computer sends, or **outputs**, data to a printer, which will print the data onto a piece of paper, also considered **output**.

### *Input devices*

An [input](#) device can send data to another device, but it cannot receive data from another device. Examples of input devices include the following.

- [Keyboard](#) and [Mouse](#) - Accepts input from a user and sends that data (input) to the computer. They cannot accept or reproduce information (output) from the computer.
- [Microphone](#) - Receives sound generated by an input source, and sends that sound to a computer.
- [Webcam](#) - Receives images generated by whatever it is pointed at (input) and sends those images to a computer.
- **Scanner**
- **Game controller**

### *Output devices*

An [output](#) device can receive data from another device and generate output with that data, but it cannot send data to another device. Examples of output devices include the following.

- [Monitor](#) - Receives data from a computer (output) and displays that information as text and images for users to view. It cannot accept data from a user and send that data to another device.
- [Projector](#) - Receives data from a computer (output) and displays, or projects, that information as text and images onto a surface, like a wall or a screen. It cannot accept data from a user and send that data to another device.
- [Speakers](#) - Receives sound data from a computer and plays the sounds for users to hear. It cannot accept sound generated by users and send that sound to another device.

## 3. Read and translate the text «Computer Hardware». Answer these questions:

- What does RAM stand for?
- What is the main function of computer's processor?
- What are the main parts of CPU?
- What does GPU stand for?

## Computer Hardware

Computer hardware is the physical components that a computer system requires to function. It encompasses everything with a circuit board that operates within a PC or laptop; including the

motherboard, graphics card, CPU (Central Processing Unit), ventilation fans, webcam, power supply, and so on.

Although the design of hardware differs between desktop PCs and laptops due to their differences in size, the same core components will be found in both. Without hardware, there would be no way of running the essential software that makes computers so useful. Software is defined as the virtual programs that run on your computer; that is, operating system, internet browser, word-processing documents, etc.

Although a computer can function only when both hardware and software are working together, the speed of a system will largely rely on the hardware used.

When building up a new computer, or simply replacing old parts, you may need to know the specific hardware in your computer. The purpose of this guide is therefore to help you understand the inner-workings of your computer.

### **Hard Drive**

The hard drive is a storage device responsible for storing permanent and temporary data. This data comes in many different forms, but is essentially anything saved or installed to a computer: for example, computer programs, family photos, operating system, word-processing documents, and so on.

There are two different types of storage devices: the traditional hard disk drive (HDD) and the newer solid state drives (SSD). Hard disk drives work by writing binary data onto spinning magnetic disks called platters that rotate at high speeds, while a solid-state drive stores data by using static flash memory chips.

### **Graphics Processing Unit (GPU)**

Especially important for 3D rendering, the GPU does exactly what its name suggests and processes huge batches of graphic data. You will find that your computer's graphics card has at least one GPU. As opposed to the basic on-board graphic capabilities that PC motherboards supply, dedicated graphics cards interface with the motherboard via an expansion slot to work almost exclusively on graphic rendering. This also means you can upgrade your graphics card if you want to get a bit more performance from your PC.

Not only this, but modern GPUs fulfil a broad computational workload beyond just rendering, making them an extension to the central processing unit.

### **Power Supply Unit (PSU)**

A power supply unit, commonly abbreviated as PSU, does more than just supply your computer with power. It is the point where power enters your system from an external power source and is then allocated by the motherboard to individual component hardware. Not all power supplies are made equally however, and without the right wattage PSU your system will fail to work.

A modern computer will generally need a PSU that's rated between 500W – 850W to effectively power all hardware, although the size of the PSU will depend entirely on the power consumption of the system. Computers that are used for highly intensive tasks such as graphic design or gaming will require more powerful components and thus will need a bigger PSU to cater to this additional need.

Without the right amount of power, components won't be able to run effectively and the computer might experience crashes or simply fail to boot at all. It's recommended to have a power supply that more than covers your system usage. Not only do you guard yourself against system failure, you also future-proof yourself against needing a new PSU when you upgrade to more powerful PC components.

Understanding your computer and its hardware components can prove very useful when the time comes to upgrade or replace any parts, or when building a computer. Should a problem arise with the internal workings of your computer, you will have a better understanding of the importance of each component, the need for them to be in good working condition and how to go about solving any issues.

## Повышенный уровень

### 1. Read, translate the text « Computer graphics». Answer the questions:

1. What are the differences between raster graphics and vector graphics?
2. Which computer graphics programs are mentioned in the text?
3. What does CAD stand for?

### Computer graphics

Computer graphics means drawing pictures on a computer screen. What's so good about that? Sketch something on [paper](#)—a man or a house—and what you have is a piece of **analog** information: the thing you draw is a likeness or *analogy* of something in the real world. Depending on the materials you use, changing what you draw can be easy or hard: you can erase pencil or charcoal marks easily enough, and you can scrape off oil [paints](#) and redo them with no trouble; but altering watercolors or permanent markers is an awful lot more tricky. That's the wonder of art, of course—it captures the fresh dash of creativity—and that's exactly what we love about it. But where everyday graphics is concerned, the immediacy of art is also a huge drawback. As every sketching child knows too well, if you draw the first part of your picture too big, you'll struggle to squeeze everything else on the page.... and what if you change your mind about where to put something or you want to swap red for orange or green for blue? Ever had one of those days where you rip up sheet after sheet of spoiled paper and toss it in the trash?

That's why many artists, designers, and architects have fallen in love with computer graphics. Draw a picture on a computer screen and what you have is a piece of **digital** information. It probably looks similar to what you'd have drawn on paper—the ghostly idea that was hovering in your mind's eye to begin with—but inside the computer your picture is stored as a series of numbers. Change the numbers and you can change the picture, in the blink of an eye or even quicker. It's easy to shift your picture around the screen, scale it up or down, rotate it, swap the colors, and transform it in all kinds of other ways. Once it's finished, you can save it, incorporate it into a text document, print it out, upload it to a [web](#) page, or email it to a client or work colleague—all because it's *digital information*. (Find out more about the benefits of digital in our main article about [analog and digital](#).)

### Raster and vector graphics

All computer art is digital, but there are two very different ways of drawing digital images on a computer screen, known as raster and vector graphics. Simple computer graphic programs like Microsoft Paint and PaintShop Pro are based on raster graphics, while more sophisticated programs such as CorelDRAW, AutoCAD, and Adobe Illustrator use vector graphics. So what exactly is the difference?

## Raster graphics

Stare hard at your computer screen and you'll notice the pictures and words are made up of tiny colored dots or squares called **pixels**. Most of the simple computer graphic images we come across are *pixelated* in this way, just like walls are built out of bricks. The first computer screens, developed in the mid-20th century, worked much like [televisions](#), which used to build up their moving pictures by "scanning" beams of electrons (tiny charged particles inside [atoms](#), also called cathode rays) back and forth from top to bottom and left to right—like a kind of instant electronic paintbrush. This way of making a picture is called **raster scanning** and that's why building up a picture on a computer screen out of pixels is called raster graphics.

## Vector graphics

There's an alternative method of computer graphics that gets around the problems of raster graphics. Instead of building up a picture out of pixels, you draw it a bit like a child would by using simple straight and curved lines called **vectors** or basic shapes (circles, curves, triangles, and so on) known as **primitives**. With raster graphics, you make a drawing of a house by building it from hundreds, thousands, or millions of individual pixels; importantly, each pixel has no connection to any other pixel except in your brain. With vector graphics, you might draw a rectangle for the basic house, smaller rectangles for the windows and door, a cylinder for the smokestack, and a polygon for the roof. Staring at the screen, a vector-graphic house still seems to be drawn out of pixels, but now the pixels are precisely related to one another—they're points along the various lines or other shapes you've drawn. Drawing with straight lines and curves instead of individual dots means you can produce an image more quickly and store it with less information: you could describe a vector-drawn house as "two red triangles and a red rectangle (the roof) sitting on a brown rectangle (the main building)," but you couldn't summarize a pixelated image so simply. It's also much easier to scale a vector-graphic image up and down by applying mathematical formulas called algorithms that transform the vectors from which your image is drawn. That's how computer programs can scale fonts to different sizes without making them look all pixelated and grainy.

## 3D graphics

Real life isn't like a computer game or a [virtual reality](#) simulation. The very best **CGI (computer-generated imagery)** animations are easy to tell apart from ones made on film or video with real actors. Why is that? When we look at objects in the world around us, they don't appear to be drawn from either pixels or vectors. In the blink of an eye, our brains gather much more information from the real-world than artists can include in even the most realistic computer-graphic images. To make a computerized image look anything like as realistic as a [photograph](#) (let alone a real-world scene), we need to include far more than simply millions of colored-in pixels.

Really sophisticated computer graphics programs use a whole series of techniques to make hand-drawn (and often completely imaginary) two-dimensional images look at least as realistic as photographs. The simplest way of achieving this is to rely on the same tricks that artists have always used—such things as **perspective** (how objects recede into the distance toward a "vanishing point" on the horizon) and **hidden-surface elimination** (where nearby things partly obscure ones that are further away).

If you want realistic 3D artwork for such things as CAD (computer-aided design) and [virtual reality](#), you need much more sophisticated graphic techniques. Rather than drawing an object, you make a 3D [computer model](#) of it inside the computer and manipulate it on the screen in

various ways. First, you build up a basic three-dimensional outline of the object called a **wire-frame** (because it's drawn from vectors that look like they could be little metal wires). Then the model is **rigged**, a process in which different bits of the object are linked together a bit like the bones in a skeleton so they move together in a realistic way. Finally, the object is **rendered**, which involves shading the outside parts with different textures (surface patterns), colors, degrees of opacity or transparency, and so on. Rendering is a hugely complex process that can take a powerful computer hours, days, or even weeks to complete. Sophisticated math is used to model how light falls on the surface, typically using either **ray tracing** (a relatively simple method of plotting how light bounces off the surface of shiny objects in straight lines) or **radiosity** (a more sophisticated method for modeling how everyday objects reflect and scatter light in duller, more complex ways).

**2. A friend has asked you to recommend him a computer that suits his needs. He needs to be able to access the Internet, play games and work with graphics, music and video files. Write an email describing its technical features and saying why you recommend it.**

**3. Tell the group what are your favorite websites? Why? Use the words to describe them: beautiful, well-designed, easy-to-use/navigate, clear, reliable, useful, informative, fun, funny, exciting, interesting.**

## 1. Критерии оценивания компетенций

**Оценка «зачтено»** выставляется студенту, если он твердо знает лексику профессиональной направленности, нормы употребления лексики английского языка в профессиональной сфере и этические нормы как основу взаимодействия культур, особенности грамматики английского языка; уверенно умеет читать и переводить специальную литературу для пополнения профессиональных знаний, осуществляет профессиональную коммуникацию в устной и письменной формах на английском языке; владеет этическими нормами общения на английском языке в межкультурной среде, навыками межкультурного общения на английском языке, навыками профессионального общения на английском языке.

**Оценка «не зачтено»** выставляется студенту, если он слабо знает лексику профессиональной направленности, нормы употребления лексики английского языка в профессиональной сфере и этические нормы как основу взаимодействия культур, особенности грамматики английского языка; не умеет читать и переводить специальную литературу; не владеет этическими нормами общения на английском языке в межкультурной среде, навыками межкультурного общения на английском языке, навыками профессионального общения на английском языке.

## 2. Описание шкалы оценивания

Максимально возможный балл за весь текущий контроль устанавливается равным **60 (55 баллов за текущий контроль и от 1 до 5 дополнительных баллов за регулярную хорошую работу, ответственное отношение к дисциплине)**. Текущее контрольное мероприятие считается сданным, если студент получил за него не менее 60% от установленного для этого контроля максимального балла. Рейтинговый балл, выставляемый студенту за текущее контрольное мероприятие, сданное студентом в установленные графиком контрольных мероприятий сроки, определяется следующим образом:

| Уровень выполнения контрольного задания | Рейтинговый балл<br>(в % от максимального балла за контрольное задание) |
|---|---|
| Отличный                                | 100   |

|                      |    |
|----------------------|----|
| Хороший              | 80 |
| Удовлетворительный   | 60 |
| Неудовлетворительный | 0  |

### 3. Методические материалы, определяющие процедуру оценивания знаний, умений, навыков и (или) опыта деятельности, характеризующих этапы формирования компетенций

Процедура проведения данного оценочного мероприятия включает в себя индивидуальные задания, которые позволяют оценить ответы студентов по дисциплине «Иностранный язык в профессиональной сфере».

УК-4 – способен осуществлять деловую коммуникацию в устной и письменной формах на государственном языке Российской Федерации и иностранном(ых) языке(ах).

Для подготовки к данному оценочному мероприятию необходимо 15,6 часа; следует изучить рекомендуемую литературу, указанную в Рабочей программе данной дисциплины; выучить новый и повторить ранее изученный лексический и грамматический материал.

При подготовке к ответу студенту предоставляется право пользоваться подготовленным им конспектом.

При проверке задания, оцениваются:

- умения студента применить знания материала на практике при выполнении предложенных заданий;
- правильность фонетического, лексического и грамматического строя иностранного языка;
- логичность и последовательность высказывания, темп речи.

#### Оценочный лист

| Оцениваемый критерий   | Оценка |
|--|--------|
| Уровень раскрытия содержания материала   |        |
| Грамотность и логичность изложения материала                                   |        |
| Использование терминологии   |        |
| Умение иллюстрировать теоретические положения конкретными примерами            |        |
| Самостоятельность ответа, без наводящих вопросов                               |        |
| Способность творчески применять знание теории к решению профессиональных задач |        |
| Знание современной учебной и научной литературы                                |        |

Составители: \_\_\_\_\_ Е.М. Шевченко

« \_\_\_\_ » \_\_\_\_\_ 20 \_\_\_\_ г.