		№35-11 (И)-2024
OŃTÚSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	**SOUTH KAZAKHSTAN MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024
Guidelines for SIW class on the subject "Information communication technology"		p.1 out of 12

GUIDELINES FOR STUDENTS INDIVIDUAL WORK(SIW)

Subject: Information and communication technology

Subject code: ICT 1105

Name of EP
　　　6B10115 Medicine
　　　6B10106 Pharmacy
　　　6B10116 Pediatrics
　　　6B10117 Stomatology
　　　6B10118 Medical and preventive care
　　　6B07201 Technology of pharmaceutical production

Number of academic hours/ credits 150/5
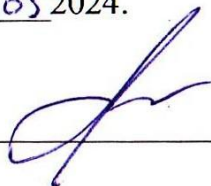
Year 1(2)

Term 1(2)

The т of independent work 100

Shymkent 2024

OŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024
Guidelines for SIW class on the subject "Information communication technology"		p.2 out of 12

The guidelines for SIW class was developed in accordance with the working curriculum (syllabus) of the discipline ICT and was discussed at the meeting of the department.

Departmental discussion held on №11 от «30» 05 2024.

Head of department ass.professor. Ph.D.,_____Ivanova M.B

	OŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SKMA 1979	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
	Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024	
	Guidelines for SIW class on the subject "Information communication technology"		p.3 out of 12	

Theme 1, 2

1. **Theme:** Development of flowcharts of operation of devices of the computer. Stage 1, 2.
2. **The goal:** the study of the graphical method of describing the algorithm for solving the problem.
3. **Assignments:**
    1. Create an algorithm and flowcharts actions of the medical registrar
    2. Create an algorithm and flowcharts of the registration on the account
    3. Create an algorithm and flowcharts development of the glossary
    4. Create an algorithm and flowcharts development of the abstract
    5. Create an algorithm and flowcharts development of the presentation
    6. Create an algorithm and flowcharts development of the crossword
    7. Create an algorithm and flowcharts installing application on the mobile
    8. Create an algorithm and flowcharts installing application on the PC
    9. Create an algorithm and flowcharts development of the website
    10. Create an algorithm and flowcharts development of the MCQs
    11. Create an algorithm and flowcharts development of the movie
    12. Create an algorithm and flowcharts development of the graphical objects
    13. Create an algorithm and flowcharts development of the database
    14. Create an algorithm and flowcharts development of the table on the MS Word
    15. Create an algorithm and flowcharts development of the table on the MS Excel
4. **Method of achievement:** project, glossary, crossword
5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**
    1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.
    2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.
    3. Craig Van Slyke. Information Communication Technology: Concepts, Methodologies, Tools, and Applications (6 Volumes).
8. **Control questions**
    1. The definition of the algorithm.
    2. The way for describe algorithms.
    3. The definition of the flowcharts.
    4. Types of flowcharts.

Theme 3, 4

1. **Theme:** Collecting, analysis and structurization of data in the professional environment (development of the database). Stage 1, 2.
2. **The goal:** to study the basic principles of work and ways of creation of databases in MS Access for application in professional sphere.
3. **Assignments:**

	ОŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SKMA	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
	Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024	
	Guidelines for SIW class on the subject "Information communication technology"		p.4 out of 12	

Themes for development of the database:
1. Clinic: doctors, patients, types of diseases, journal of patients' arrival.
2. Pharmacy: nomenclature of drugs, pharmacy workers, buyers, sales log.
3. Veterinary clinic: list of animals, list of diseases, list of owners, log of visits.
4. Computer classes: list of course participants, list of subjects, list of teachers, journal of progress.
5. Analysis of the causes of morbidity: list of patients, list of diseases, list of districts, register of patients.
6. Vaccinations for children: a list of vaccinations, a list of children, a list of parents, a log of vaccinations made.
7. Project works: list of projects, list of specialists, list of positions, journal of work accounting.
8. Health care system: list of regions, list of health resorts, list of pensioners, journal of registration of vouchers to health resorts.
9. Accounting of computer equipment: list of equipment types, list of material responsible persons, list of departments, register of equipment issue.
10. Economic database: list of regions, list of indicators, list of industries, reporting statistics.
11. Bookstore: authors, books, sellers, buyers, sales registration.
12. Dean's office: teachers, subjects, students, academic journals.
13. Library: authors, books, registration subscription reader.
14. Laboratory: doctors, patients, types of diseases, types of analysis
15. Center of diagnostic: ultrasound, ECG, encephalography, MRI scan, registration

4. **Method of achievement:** project, glossary, crossword
5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**
   1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.
   2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.
   3. Shynybekov D.A. and others. Information and communication technology. Textbook: in 2 parts.Part 1,1st ed. - Almaty:IITU,2017.- 588 p.
8. **Control questions**
   1. Database concepts
   2. Types of databases
   3. Relational databases.
   4. Briefly describe the objects available in MS Access.

Theme 5, 6
1. **Theme:** Description of network topology of the office building (creating presentation). Stage 1, 2.

	ONTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024	
Guidelines for SIW class on the subject "Information communication technology"		p.5 out of 12	

2. **The goal:** to develop a solid grasp of network by introducing the basic concepts.
3. **Assignments:**
    1. Classification of networks.
    2. Types of topologies.
    3. Networking hardware.
    4. Networking software.
    5. Types of servers.
    6. Tools for connecting networks
    7. Workgroup server
    8. Proxy server
    9. Server domain controller
    10. Protocols
    11. New generation networks
    12. Network function virtualization
    13. Wireless network
    14. Types of cables
    15. DHCP
4. **Method of achievement:** project, glossary, crossword
5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**
    1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.
    2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.
    3. Craig Van Slyke. Information Communication Technology: Concepts, Methodologies, Tools, and Applications (6 Volumes).
8. **Control questions**
    1. The definition of the LAN
    2. The definition of the MAN
    3. The definition of the WAN
    4. The definition of the Bus, Star, Ring topologies

Theme 7, 8
1. **Theme:**Comparative analysis of antivirus means of information protection (designing website).Stage1,2.
2. **The goal::** to provide basic concepts of information security and to develop the ability to develop websites.
3. **Assignments:**
    1. Develop of the website "Malwares"
    2. Develop of the website "Firewalls"
    3. Develop of the website "Mathematics "
    4. Develop of the website "The effect of PC on human health".

OŃTÚSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Department of "Medical Biophysics and Information Technology"	№35-11 (И)-2024
Guidelines for SIW class on the subject "Information communication technology"	p.6 out of 12

5. Develop of the website "History of computer technology development"
6. Develop of the website "Nobel laureates in computer science"
7. Develop of the website "Computer science as art"
8. Develop of the website "Medicine"
9. Develop of the website "Healthcare"
10. Develop of the website "Stomatology"
11. Develop of the website "Clinic"
12. Develop of the website "Diagnostic center"
13. Develop of the website "Virus"
14. Develop of the website "Computers and teenagers"
15. Develop of the website "Life of modern society without a computer"

4. **Method of achievement:** project, glossary, crossword
5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**

1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.

2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.

3. Shynybekov D.A. and others. Information and communication technology. Textbook: in 2 parts. Part 1, 1st ed. - Almaty: IITU, 2017.

8. **Control questions**
   1. The definition of the viruses
   2. The definition of the antiviruses
   3. Virus types
   4. Antivirus types
   5. Advantages and disadvantages antiviruses
   6. Languages for developed websites

Theme 9, 10
1. **Theme:** Information search in a specialty profile on the Internet, use of cloud services for storage and data processing (logical circuits to topics). Stage 1, 2.
2. **The goal:** to instill basic concepts of additional possibilities of the programs for using in professional sphere.
3. **Assignments:**
   1. Scanning and character recognition systems.
   2. World wide web: network access and main communication channels.
   3. The basic principles of the Internet.
   4. Varieties of search engines on the Internet.
   5. Programs designed to work with e-mail.
   6. Wireless Internet: features of its functioning.
   7. Information security system on the Internet.
4. **Method of achievement:** project, glossary, crossword

ОŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
Department of "Medical Biophysics and Information Technology"	№35-11 (И)-2024
Guidelines for SIW class on the subject "Information communication technology"	p.7 out of 12

5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**
   1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.
   2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.
   3. Craig Van Slyke. Information Communication Technology: Concepts, Methodologies, Tools, and Applications (6 Volumes).
8. **Control questions**
   1. Using Cloud technology in professional sphere
   2. Using Wireless Internet in professional sphere
   3. Using additional features of the PowerPoint
   4. Using additional features of the internet

Theme 11, 12
1. **Theme:** Creation of an emblem, the video and other materials on a specialty profile means of multimedia technology. Stage 1, 2.
2. **The goal:** to instill skills in special graphics programs and video editors
3. **Assignments:**
The topics for creation of video:
   1. Evolution of computer systems.
   2. Architecture and components of computer systems.
   3. Software. Operating systems.
   4. Types of interfaces: command line interface, text interface, graphic interface.
   5. Database systems
   6. Visualization of data.
   7. Malicious applications.
   8. Digital signature. Encoding.
   9. Technology of virtualization.
   10. Tools of development of multimedia applications.
   11. Teleconferences. Telemedicine.
   12. 3-D representations of the virtual world and animation.
4. **Method of achievement:** project, glossary, crossword
5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**
   1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.
   2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.
   3. Shynybekov D.A. and others. Information and communication technology. Textbook: in 2 parts. Part 1, 1st ed. - Almaty: IITU, 2017.
8. **Control questions**

	OŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
	Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024
	Guidelines for SIW class on the subject "Information communication technology"		p.8 out of 12

1. The programs for creating graphical emblems
2. Using additional features of the PowerPoint for creation of MCQs
3. Using HTML for creation of MCQs

Theme 13, 14

1. **Theme:** Presentation and protection of the main results of design activity in the specialty.Stage1
2. **The goal:** to develop public protection skills.
   The theme: Your specialty
4. **Method of achievement:** project, MCQs
5. **Criteria assessment of SIW performance:** in the table paragraph 4
6. **Submission requirements:** in the table paragraph 3
7. **Bibliography:**

1. Urmashev B.A. Information and communication technology: Textbook / B.A. Urmashev. – Almaty, 2016. - 410 p.
2. Nurpeisova T.B., Kaidash I.N. ICT, Almaty, Bastau, 2017. 241 p.
4. Duisebekova K.S., Satybaldiyeva R.Z., Hasanova G.I., Urmashev B.A. Information and communication technology. Textbook: in 2 parts. Part 1, 1st ed. - Almaty: IITU, 2017.

   8.Control questions
   1. The programs for creating graphical object
   2. Creation of MCQs
   3. Using HTML for creation of MCQs

Theme 15

1. **Theme:** Defense of the independent study of students. Development of the scheme of the course ICT (analysis of learning outcomes). Stage 1, 2.
2. **The goal:** to get feedback from students about the results of learning outcomes.

The content and requirements for performance SIW

   1. Students individual work (SIW): work with textbooks and scientific literature, performing tasks, preparation of individual tasks on the theme.

   2. Requirements to SIW processing: student should do the task on time and in full. SIW considered during out-class work.

   When performing tasks students should:
❖ to receive consultations of teacher;
❖ to be able to classify the basic and additional literature, statistical data for solve problems;
❖ the task can be done individually or with a group.

   3. Types of SIW: project, glossary, MCQ, crossword, presentation.
   SIW is accepted in electronic form.

- **Glossary** is a list of key terms and definitions on the theme, in the form of the table.
- **Presentation** is preparedby students independently, on a chosen theme, using no

OŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»
Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024	
Guidelines for SIW class on the subject "Information communication technology"		p.9 out of 12	

less than 3 references. Slides should be informative and concise. The author should demonstrate in-depth knowledge on the theme, not to make mistakes in answering the Questions during the discussion. Time of presentation is 7-10 minutes. The presentation should disclose the theme, arouse the interest of the listener, is estimated professionalism and level of performance. The presentation is stored on a CD-ROM.

- **Logical curcuits -**it is a logical structure that includes the basic concepts and categories on a particular topic, taking into account the relationship between them must satisfy the following requirement
    - target and conceptual significance of elements and connections and their hierarchical arrangement in the scheme space (for example, basic, auxiliary, inverse, etc.)
    - simplicity of the schematic diagram (expressed in minimizing the number of elements and their connections in the scheme)
    - visualization of the scheme using the means of graphics, image forms, color differences, etc.
- **Designing websites**
- **MCQ** contain not less than 10 Questions. The basis of the test is meaningful. MCQs should be meaningful, clearly stated specifically. MCQs should have 5 possible answers and the correct answers marked.
- **Crossword** is a game consisting of solving a word on definitions, contributing to the development of human thinking, which helps to expand his horizons.
    3. **Rules of assessment of SIW:** SIW is estimated completeness of the requirements to the theme and exhibited the following table.

The criteria of assessment of SIW*

SIW I	min	max
1.creating flowcharts	15	30
2.creating database	25	50
3.compiling the glossary (practical class themes 1-3)-1-3 week	5	10
4.for preparation crossword (practical class themes 1-3)	5	10
Total	50	100
SIW II	min	Max
1 creating presentation	15	30
2 creating of MCQ s	25	50
3 compiling the glossary (practical class themes 4-6)	5	10
4 for preparation crossword (practical class themes 4-6) 4-6 weeks	5	10
Total	50	100
SIW III	min	max
1.Logical circuits on this topic (practical class themes №7,8,9,10)8-10 weeks*	15	30
2.designing websites	25	50

ONŤÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»
Department of "Medical Biophysics and Information Technology"	№35-11 (И)-2024
Guidelines for SIW class on the subject "Information communication technology"	p.10 out of 12

3.compiling the glossary (practical class themes 7-10)	5	10
4.For preparation crossword (practical class themes 7-10)	5	10
Total	*50*	*100*
SIW IV	**min**	**max**
creating of video	15	30
creating of an emblem медицина	25	50
compiling the glossary (practical class themes 11-12)	5	10
for preparation crossword (practical class themes 11-12) 11-12 week	5	10
Total	*50*	*100*
SIW V	**min**	**max**
Development of graphic objects on medicine(practical class themes 13-15) 13-15*	30	70
creating of MCQ s(practical class themes 13-15)	20	30
Total	*50*	*100*

ONTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SKMA –1979–	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»
Department of "Medical Biophysics and Information Technology"		№35-11 (И)-2024
Guidelines for SIW class on the subject "Information communication technology"		p.11 out of 12

	OŃTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SKMA –1979–	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
Department of "Medical Biophysics and Information Technology"			№35-11 (И)-2024	
Guidelines for SIW class on the subject "Information communication technology"			p.12 out of 12	