Ministry of Science and Higher Education of the Russian Federation
Federal State-Funded Educational Institution of Higher Education
ULYANOVSK STATE UNIVERSITY
Faculty of Medicine
Department of Human Anatomy

GUIDELINES FOR INDIVIDUAL WORK OF STUDENTS FOR THE DISCIPLINE « MODERN MEDICAL INFORMATION SYSTEMS »

Specialty - 31.05.01 «General medicine»
Form of study: intramural

Developers:
J.F. ZERKALOVA, M.V. VOROTNIKOVA

Ulyanovsk, 2021

УДК
ББК
К

Published by the decision of the Academic Council of the ULSU

Institute of Medicine, Ecology and Physical Culture

Ulyanovsk State University

Reviewer: candidate of biological sciences, associate Professor O. A. Mironcheva

Guidelines for Individual work of students for discipline "Modern medical information systems " / Comp.: Zerkalova J.F., Vorotnikova M.V.,- Ulyanovsk, USU, 2021. - 11 p.

Methodical instructions are prepared in accordance with the working program of the discipline "Modern medical information systems". The structure of guidelines includes guidelines for students on each topic studied according to the plan of classroom work. Methodical instructions are intended for students of the faculty of medicine, trained in specialties 31.05.01- General medicine, 31.05.02-Pediatrics.

CONTENT

1. GOALS AND OBJECTIVES OF THE DISCIPLINE

Goals of mastering the discipline:

The purpose of the discipline development is to form students ' knowledge about the essence and significance of health Informatization in General, modern information technologies for providing medical and diagnostic process, management in Healthcare Service and biomedical research.

Tasks of mastering the discipline:

- to form students ' knowledge about the use of modern information technologies in medicine, medical science and healthcare;

-study the overall structure, software and hardware for obtaining, entering, storing, searching, processing and analyzing biomedical information and its protection;

- give students information about the types and classification of modern information systems and technologies.

- to give knowledge about the rules of implementation and use used in the treatment and diagnostic process of modern information and telemedicine systems;

- teach students to use modern information and telemedicine systems to process biomedical information.

2.REQUIREMENTS TO RESULTS OF MASTERING THE DISCIPLINE

Discipline "Modern medical information system" refers to basic part of the basic professional educational program specialty 31.05.01 General medicine.
The results of mastering the discipline will be necessary for the further learning process in the framework of the gradual formation of competencies in the study of the following special disciplines:
 -Public health and healthcare
-Marketing in healthcare
-Organization of drug supply to the population
-Practice for obtaining primary professional skills and skills of an outpatient clinic doctor
-Assistant doctor of an outpatient clinic
-Epidemiology
-Modern aspects of oncology
-Actual issues of internal diseases
-Quality management of medical care
-Preparation for passing and passing the state exam

<h1 style="text-align:center">3.THEMES OF THE INDIVIDUAL WORK</h1>

1.2.2. The concept of creating a unified state information system in the field of health of the Ministry of health and social development of the Russian Federation .

The purpose of the lesson and its motivational characteristics

To study the main goals of health Informatization. The concept creating of Uniform State Health Information System. The concept of creating a unified state information system in the field of health of the Ministry of health of the Russian Federation

Questions to control knowledge in the classroom:

1) What are the goals of health Informatization?

2) Determine the social significance and economic effects of Informatization of medicine.

3) Formulate the concept of e-health.

Type of individual work

.Individual work on the subject provides for an independent search on the official web-site of the Ministry of health and an independent study of the text of the "concept of creating a unified state information system in the health sector (order of the Ministry of health and social development of the Russian Federation No. 364 of 28 April 2011)" the formulation of the basic concept-rd and terms of a document, abstracting the document structure and content of the main sections. In the process of independent work, the student must master the skills of working with legal documents to obtain the appropriate professional competence in the information support of organizational and managerial activities

Form of control: Quiz, Interview

2.1.2. Key terms in the field of IT use in healthcare.

The purpose of the lesson and its motivational characteristics

To study and determine the term "Electronic medical record (EMR)», "Electronic documents".,"Electronic medical archives".

Questions to control knowledge in the classroom:

1)What are the common challenges in defining key terms in health Informatization?

2) Formulate the concept of " Electronic medical history."

3) Define the term "Electronic medical record (EMR)»

4) What is the model of the subject area of EMR?

5) Define the term "Electronic records".

6) Define the term "Electronic documents".

7) Define the term "Electronic medical archives".

Type of individual work

Individual work on the topic provides an independent search in Internet databases, reference information systems, electronic textbooks and teaching AIDS of the following basic terms used in the field of health Informatization, their understanding, memorization and contextual reproduction: "electronic health or e-health", "electronic medical history", "electronic medical record", "electronic records", "electronic documents", " electronic medical archives»

Form of control: Quiz, Interview

2.3.2. General principles of information security in medical information systems.

The purpose of the lesson and its motivational characteristics

To study General principles of information security in medical information systems.

Questions to control knowledge in the classroom:

1) List the main legal and regulatory acts regulating the requirements for the processes of personal data processing (PD).

2) Define the concept of"personal data" - PD.

3) What is meant by the operator PD?

4) What is the procedure for registration of PD operators and the register of PD operators?

5) Formulate the concept of PD in the health care system.

6) Give the definition of the term "subject PD".

7) What is the order, procedure and registration of consent to provide PD?

8) What are the measures to ensure the protection of PD in the implementation of information systems in the work of health care institutions?

Type of individual work

.Individual work on the subject provides for an independent search in the Internet, and independent study of the text of the "Federal law on personal data 152-FL of the Russian Federation", the language of basic concepts and terms in the document, abstracting the document structure and content of the main sections and values for the information infrastructure of medical, managerial and research activities. In the process of independent work, the student must master the skills of working with legal documents to obtain appropriate professional competencies in the information support of organizational and management activities

Form of control: Quiz, Interview

2.8.2. Special medical information systems.

The purpose of the lesson and its motivational characteristics

To study the specifics of the MIS ambulance service

Questions to control knowledge in the classroom

1) What is the specifics of the MIS ambulance service?

2) What are the features of the organization of information support of the disaster medicine service?

3)What are the features of MIS services of transfusion and procurement of blood and blood products?

4) What are the specifics of MIS forensic medicine and transplantation?

5) What are the specifics of expert decision support systems?

6) What are the specifics of medical information pharmaceutical systems of pharmacies and drug supply services?

Type of individual work

.Information support of medical diagnostic equipment. Basic principles of graphic data recognition programs in electrocardiography and biopotential recording devices. X-ray image recognition software. Computer x-ray and computed tomography software. Computer analysis of microscopic images

Form of control: Quiz, Interview

2.10.2. Information and educational medical Internet resources.

The purpose of the lesson and its motivational characteristics

To study the overall quality of medical information on the Internet according to the data.international the Net Foundation (HON). Information and educational medical Internet resources

Questions to control knowledge in the classroom:

1) What is the overall quality of medical information on the Internet according to the data.international the Net Foundation (HON)?

2) How and for what was created the the Net Foundation (HON)?

3) What are the directions of the international cooperation Fund?

4) What is the system of certification of medical websites?

5) What is the HON-code database?

6) What are the prospects for the development of certification and evaluation of the quality and reliability of information on medical web sites?

Type of individual work

Internet educational resources for pre-and post-graduate training of medical specialists. Educational portals for the training of nurses and doctors. .Professional medical websites of public and non-governmental organizations and associations of medical specialists. Sites of professional communities of medical specialists. Scientific medical societies on the Internet. Electronic medical libraries and organized databases. Medical reference sites for patients. Individual work of the student is an assessment of the above electronic resources on the basis of HON criteria and submission of a brief conclusion in writing to the lector.

Form of control: Quiz, Interview

3.5. The main types of telemedicine activities.

The purpose of the lesson and its motivational characteristics

To study the main types of telemedicine activities, the educational and organizational and methodological activities of the typical TMC

Questions to control knowledge in the classroom:

1) List the activities of telemedicine centers

2) What is the Clinical and Advisory activities of the typical TMC?

3) What is the educational and organizational and methodological activities of the typical TMC?

4) What is the educational, information and telecommunication and research work of a typical TMC?

Type of individual work

Individual work in studying the work of a typical telemedicine centre, its structural organization, staff, distribution of functional duties of employees, annual plan, list and types of work performed, list of equipment and the direct participation in its operation or participation in specific telemedical event, with the design of brief written report and presentation to the lector.

Form of control: Quiz, Interview

4. CONTROL QUESTIONS ON DISCIPLINE

(QUESTIONS FOR A CREDIT)

№	Question
1.	Purpose healthcare Informatics. Social significance and economic effects of Informatization of medicine. The concept of e-health.
2.	The main goals, directions and features of Informatization of the health care system in Russia
3.	Structure and content "The concept creating of Uniform State Health Information System" of the Ministry of health of the Russian Federation»
4.	Common problems in defining key terms in health Informatization. The concept of electronic medical document.
5.	The main legal and regulatory acts regulating the requirements of the production process personal data (PD).
6.	The protection of security of personal data (PD) in the implementation of information systems in the work of health care institutions.
7.	The concept of electronic medical history. National standard "Electronic medical history".
8.	The contents of the electronic medical history and applications for their processing.
9.	Classification of medical information systems. Structure (building blocks) multi-purpose clinical information systems.
10.	General principles of implementation and operation of medical information systems
11.	Medical information and analytical centers. Aims and objectives of MIAC for the management of regional health systems

12.	Expert decision support systems.
13.	Medical information pharmaceutical systems of pharmacies and drug supply services
14.	Information support of medical diagnostic equipment. Basic principles of graphic data recognition programs in biopotential recording devices.
15.	Programs for recognition of x-ray images, computer x-ray (CT) and computer magnetic resonance imaging (MRI) data.
16.	Computer analysis of microscopic images.
17.	Website of the medical institution, its structure, data organization, interface
18.	Interactive services of websites of medical institutions.
19.	Types of reference information systems. Register of medicines of Russia and its electronic version
20.	Medical Advisory Internet sites.
21.	Internet educational resources for pre-and post-graduate training of medical specialists.
22.	Professional medical websites of public and non-governmental organizations and associations of medical specialists.
23.	Electronic medical libraries and organized databases of scientific medical data
24.	Telemedicine as a technology. The main directions of development, principles of construction and levels of organization of telemedicine systems.
25.	The main functions of telemedicine centers.
26.	The concept of telemedicine service. The main legal documents on telemedicine
27.	Equipment designed for input, conversion and exchange of e-mail, video conferencing systems or other software applications over communication channels.
28.	General principles of assessment of reliability of medical information of information systems in health care.
29.	General principles of evaluation of socio-economic efficiency of information systems in health care.
30.	Activities of telemedicine centers.

5. THE LIST OF RECOMMENDED LITERATURE

a) List of recommended literature:

Core reading
1. The concept of creating a unified state information system in the health sector.Order of the Ministry of health and social development № 364 of April 28, 2011.- Access mode : http://www.consultant.ru/document/cons_doc_LAW_113731/

Supplementary reading

1. GOST R 52636-2006. Electronic medical history. Generalities. - Mode of access : http://gostrf.com/normadata/1/4293844/4293844841.pdf

2. GOST R ISO/TS 18308-2008. Requirements for the architecture of electronic health accounting. - Access mode : http://docs.cntd.ru/document/1200067414

3. Federal law" On Information, Information Technologies and Information Protection " of 27.07.2006 N 149-FZ (latest edition).- Mode of access : http://www.consultant.ru/document/cons_doc_LAW_61798/

Educational-methodical reading
1. Information technology in the health system (digital medicine): studies.-method. manual for General medical network doctors, clinical residents, medical students. high schools / A. P. Alabin [et al.]; USU, Emailk, Honey. FAK., CFR. societies'. health and health. - Ulyanovsk : USU, 2018. - 67 p. - b / p.
2. Guidelines for Individual work of students for discipline "Modern medical information systems " [Электронный ресурс] / comp. by J.F. Zerkalova, M.V. Vorotnikova ; Ulyanovsk State University, Faculty of Medicine, Department of Human Anatomy. - Электрон. текстовые дан. (1 файл : 252 Кб). - Ulyanovsk : UlSU, 2019. - Загл. с экрана. - Неопубликованный ресурс.
http://lib.ulsu.ru/MegaPro/Download/MObject/1836/Zerkalova2019-2.pdf

б) Computer software

The information infrastructure of the Department includes web-pages on the official website of the University, its own computer class for testing students at 8 workplaces, personal computers of modern generation (equipped with each workplace of teachers, staff and graduate students), multimedia lecture complexes (2 stationary and portable), all computers without exception are in the local network of the University and have access to the Internet, printers and copiers, computer equipment. 100% of lectures on specialties of the medical faculty are provided with multimedia presentations, including animations and video clips. The educational process uses more than 30 electronic textbooks and manuals, open Internet resources, including the use in on-line mode during practical classes and lectures, DVD-videos on individual sections of the disciplines taught, the Department has organized a database of electronic textbooks and atlases with network access in the local network of the educational building of the medical faculty.

c) Professional databases, information and reference systems:

1. Digital Library System:

1.1. IPRbooks : электронно-библиотечная система : сайт / группа компаний Ай Пи Ар Медиа. - Саратов, [2021]. – URL: http://www.iprbookshop.ru. – Режим доступа: для зарегистрир. пользователей. - Текст : электронный.

1.2. ЮРАЙТ : электронно-библиотечная система : сайт / ООО Электронное издательство ЮРАЙТ. – Москва, [2021]. - URL: https://urait.ru. – Режим доступа: для зарегистрир. пользователей. - Текст : электронный.

1.3. Консультант студента : электронно-библиотечная система : сайт / ООО Политехресурс. – Москва, [2021]. – URL: https://www.studentlibrary.ru/cgi-bin/mb4x. – Режим доступа: для зарегистрир. пользователей. – Текст : электронный.

1.4. Консультант врача : электронно-библиотечная система : сайт / ООО Высшая школа организации и управления здравоохранением-Комплексный медицинский консалтинг. – Москва, [2021]. – URL: https://www.rosmedlib.ru. – Режим доступа: для зарегистрир. пользователей. – Текст : электронный.

1.5. Большая медицинская библиотека : электронно-библиотечная система : сайт / ООО Букап. – Томск, [2021]. – URL: https://www.books-up.ru/ru/library/ . – Режим доступа: для зарегистрир. пользователей. – Текст : электронный.

1.6. Лань : электронно-библиотечная система : сайт / ООО ЭБС Лань. – Санкт-Петербург, [2021]. – URL: https://e.lanbook.com. – Режим доступа: для зарегистрир. пользователей. – Текст : электронный.

1.7. **Znanium.com :** электронно-библиотечная система : сайт / ООО Знаниум. - Москва, [2021]. - URL: http://znanium.com . – Режим доступа : для зарегистрир. пользователей. - Текст : электронный.

1.8. Clinical Collection : коллекция для медицинских университетов, клиник, медицинских библиотек // EBSCOhost : [портал]. – URL: http://web.b.ebscohost.com/ehost/search/advanced?vid=1&sid=9f57a3e1-1191-414b-8763-e97828f9f7e1%40sessionmgr102 . – Режим доступа : для авториз. пользователей. – Текст : электронный.

1.9. Русский язык как иностранный : электронно-образовательный ресурс для иностранных студентов : сайт / ООО Компания «Ай Пи Ар Медиа». – Саратов, [2021]. – URL: https://ros-edu.ru. – Режим доступа: для зарегистрир. пользователей. – Текст : электронный.

 2. КонсультантПлюс [Электронный ресурс]: справочная правовая система. /ООО «Консультант Плюс» - Электрон. дан. - Москва : КонсультантПлюс, [2021].

3. Базы данных периодических изданий:

3.1. База данных периодических изданий : электронные журналы / ООО ИВИС. - Москва, [2021]. – URL: https://dlib.eastview.com/browse/udb/12. – Режим доступа : для авториз. пользователей. – Текст : электронный.

3.2. eLIBRARY.RU: научная электронная библиотека : сайт / ООО Научная Электронная Библиотека. – Москва, [2021]. – URL: http://elibrary.ru. – Режим доступа : для авториз. пользователей. – Текст : электронный

3.3. «Grebennikon» : электронная библиотека / ИД Гребенников. – Москва, [2021]. – URL: https://id2.action-media.ru/Personal/Products. – Режим доступа : для авториз. пользователей. – Текст : электронный.

4. Национальная электронная библиотека : электронная библиотека : федеральная государственная информационная система : сайт / Министерство культуры РФ ; РГБ. – Москва, [2021]. – URL: https://нэб.рф. – Режим доступа : для пользователей научной библиотеки. – Текст : электронный.

5. SMART Imagebase // EBSCOhost : [портал]. – URL: https://ebsco.smartimagebase.com/?TOKEN=EBSCO-1a2ff8c55aa76d8229047223a7d6dc9c&custid=s6895741. – Режим доступа : для авториз. пользователей. – Изображение : электронные.

6. Федеральные информационно-образовательные порталы:

6.1. Единое окно доступа к образовательным ресурсам : федеральный портал / учредитель ФГАОУ ДПО ЦРГОП и ИТ. – URL: http://window.edu.ru/ . – Текст : электронный.

6.2. Российское образование : федеральный портал / учредитель ФГАОУ ДПО ЦРГОП и ИТ. – URL: http://www.edu.ru. – Текст : электронный.

7. Образовательные ресурсы УлГУ:

7.1. Электронная библиотека УлГУ : модуль АБИС Мега-ПРО / ООО «Дата Экспресс». – URL: http://lib.ulsu.ru/MegaPro/Web. – Режим доступа : для пользователей научной библиотеки. – Текст : электронный.