INFORMATION AND COMMUNICATION TECHNOLOGIES IN HEALTHCARE

SECOND YEAR

2023/2024.

Subject:

Information and communication technologies in healthcare

The course is evaluated with 3 ECTS. There are 3 hours of active teaching per week (2 hours of lectures and 1 hour of work in a small group).

Teachers:

No	Name and surname	Email address	Title
1.	Vladimir Janjic	vladadok@yahoo.com	full professor
2.	Vladimir Vukomanovic	vukomanovic@gmail.com	Assistant professor
3.	Vesna Ignjatovic	vesnaivladaignjatovic@gmail.com	Assistant professor
4.	Snezana Radovanovic	jovanarad@yahoo.com	associate professor
5	Branimir Radmanovic	biokg2005@yahoo.com	assistant professor
5.	Milan Djordjic	mcpikac@gmail.com	assistant
6.	Sladjana Veselinovic	sladjave@gmail.com	teaching associate
7.	Ermin Fetahovic	erminfetahovic96@gmail.com	teaching associate
8.	Katarina Vuleta Nedic	kvuleta87@gmail.com	Teaching assistant

COURSE STRUCTURE:

Module	Name of the module	Week	Lectures weekly	Work in a small group per week	Teacher
1	Information and communication technologies in healthcare	15	2	1	
					Σ30+15=45

EVALUATION:

The grade is equivalent to the number of points won (see tables). Points are earned in two ways:

ACTIVITY DURING THE LESSON: In this way, the student can earn up to 40 points trough seminars. In order to pass the activity during the lesson, the student must obtain more than 50% of the points.

FINAL TEST: In this way, the student can gain 60 points according to the attached scheme. In order to pass the final test, the student must obtain more than 50% of the points.

MODULE		MAXIMUM NUMBER OF POINTS		
		Seminars	**Final exam**	**Σ**
1	Information and communication technologies in healthcare	40	60	100
Σ		**40**	**60**	**100**

The final grade is formed as follows:

In order to pass the course, the student must obtain a minimum of 51 points, pass pre-exam activities and pass the final exam (test).

number of points won	grade
0 - 50	5
51 - 60	6
61 - 70	7
71 - 80	8
81 - 90	9
91 - 100	10

FINAL TEST
0-60 points

EVALUATION OF
FINAL TEST
The test has 30 questions.
Each question is worth 2 points.

LITERATURE:

the name of the textbook	authors	publisher	the library
Medical Informatics, e-Health: Fundamentals and Applications.	Landais P, Boudemaghe T, Suehs C, Dedet G, Lebihan-Benjamin C, Venot A, Burgun A, Quantin C.	Springer. 2014.	Yes
e-Health systems: theory and technical applications.	Rodrigues JJ, Compte SS, De la Torre Diez I.	Elsevier. 2016	No
Telemedicine: The Computer Transformation of Healthcare.	Choudhury T, Katal A, Um JS, Rana A, Al-Akaidi M.	Springer. 2022	No

The presentations and accompanying document in *Word* can be found on the website of the Faculty of Medical Sciences :www.medf.kg.ac.rs

PROGRAM

TEACHING UNIT 1 (FIRST WEEK)

STANDARDS IN BIOMEDICAL INFORMATICS APPLICATIONS.

System design and engineering in health care. Infrastructure and basic requirements of electronic health systems. Concepts, functionalities and benefits.

TEACHING UNIT 2 (SECOND WEEK)

HOSPITAL INFORMATION SYSTEMS

Integrated management of medical orders in electronic health. Clinical and laboratory information systems. Information retrieval and digital libraries

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TEACHING UNIT 3 (THIRD WEEK)

ELECTRONIC HEALTH RECORD SYSTEMS

Electronic health record. Functional components of an electronic health record system. Clinical decision support. Barriers and benefits.

TEACHING UNIT 4 (FOURTH WEEK)

MANAGEMENT OF INFORMATION IN HEALTHCARE ORGANIZATIONS

Management of medical orders. Information systems for diagnostic test management. Principles of information security and confidentiality in healthcare settings

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TEACHING UNIT 5 (FIFTH WEEK)

MEDICAL IMAGING AND THERAPY SYSTEMS

Radiology. Nuclear medicine. Radiation therapy. RIS and PACS technology. Biomedical data: acquisition, storage, and use

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TEACHING UNIT 6 (SIXTH WEEK)

TELEMEDICINE

General considerations. Barriers and benefits. Taxonomy. Clinical areas of application.

TEACHING UNIT 7 (SEVENTH WEEK)

COMPUTERS IN MEDICAL EDUCATION

Exchange of health information. Benefits and limitations. Clinical decision-support systems. Feedback and guidance. Current applications

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TEACHING UNIT 8 (EIGHT WEEK)

CONSUMER HEALTH INFORMATICS AND TELEHEALTH

Consumerism and consumer health informatics. Access to health information. Challenges to using the internet for consumer health and telehealth applications

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TEACHING UNIT 9 (NINTH WEEK)

THE FUTURE OF COMPUTER APPLICATIONS IN BIOMEDICINE

Current and future role of computers in health care. Integration of computer-based medicine.

TEACHING UNIT 10 (TENTH WEEK)

PUBLIC HEALTH INFORMATION SYSTEMS

Information and public health procedures. Health Information Infrastructure. The scope and components of public health information systems.

TEACHING UNIT 11 (ELEVENTH WEEK)

PRIMARY CARE INFORMATION SYSTEMS

Functions of the information system in primary care, standards, and Outcomes. Electronic pharmacy management.

TEACHING UNIT 12 (TWELFTH WEEK)

INFORMATION TECHNOLOGIES IN INTERNAL MEDICINE

The use of modern information technology in cardiology, gastroenterology, endocrinology, hematology, nephro-urology

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TEACHING UNIT 13 (THIRTEENTH WEEK)

INFORMATION TECHNOLOGIES IN SURGERY

Telepresence surgery, robotics, tele-education, computer-aided systems, image-guided surgery, 3D printing

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TEACHING UNIT 14 (FOURTEENTH WEEK)

INFORMATION TECHNOLOGIES IN PSYCHIATRY

Telepsychiatry, the use of telemedicine and telecare in the mental health sector

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TEACHING UNIT 15 (FIFTEENTH WEEK)

INFORMATION TECHNOLOGIES IN INFECTIOUS DISEASES

Digital technologies for the surveillance, prevention and control of infectious diseases

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WEEKLY COURSE SCHEDULE

COURSE	THURSDAY
INFORMATION AND COMMUNICATION TECHNOLOGIES IN HEALTHCARE	**LECTURES AND SEMINAR** **12:00 - 14:15** (H4)

module	week	type	method unit name	teacher
	1	**L**	STANDARDS IN BIOMEDICAL INFORMATICS APPLICATIONS.	Prof. Dr. Vladimir Janjic Asst. Prof. Dr. Vladimir Vukomanovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	2	**L**	HOSPITAL INFORMATION SYSTEMS	Asst. Prof. Dr. Branimir Radmanovic Prof. Dr. Vladimir Janjic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	3	**L**	ELECTRONIC HEALTH RECORD SYSTEMS	Asst. Prof. Dr. Branimir Radmanovic Prof. Dr. Vladimir Janjic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	4	**L**	MANAGEMENT OF INFORMATION IN HEALTHCARE ORGANIZATIONS	Asst. Prof. Dr. Vladimir Vukomanovic Asst. Prof. Dr. Vesna Ignjatovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Katarina Vuleta Nedić, dr Ermin Fetahovic
	5	**L**	MEDICAL IMAGING AND THERAPY SYSTEMS	Asst. Prof. Dr. Vladimir Vukomanovic Asst. Prof. Dr. Vesna Ignjatovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Katarina Vuleta Nedic, dr Ermin Fetahovic
	6	**L**	TELEMEDICINE	Asst. Prof. Dr. Vladimir Vukomanovic Prof. Dr. Vladimir Janjic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	7	**L**	COMPUTERS IN MEDICAL EDUCATION	Asst. Prof. Dr. Vladimir Vukomanovic Asst. Prof. Dr. Vesna Ignjatovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	8	**L**	CONSUMER HEALTH INFORMATICS AND TELEHEALTH	Prof. Dr. Vladimir Janjic Asst. Prof. Dr. Branimir Radmanovic

module	week	type	method unit name	teacher
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	9	**L**	THE FUTURE OF COMPUTER APPLICATIONS IN BIOMEDICINE	Asst. Prof. Dr. Vesna Ignjatovic Asst. Prof. Dr. Vladimir Vukomanovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	10	**L**	PUBLIC HEALTH INFORMATION SYSTEMS	Assoc. Prof. Dr. Snezana Radovanovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	11	**L**	PRIMARY CARE INFORMATION SYSTEMS	Assoc. Prof. Dr. Snezana Radovanovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	12	**L**	INFORMATION TECHNOLOGIES IN INTERNAL MEDICINE	Asst. Prof. Dr. Branimir Radmanovic Prof. Dr. Vladimir Janjic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	13	**L**	INFORMATION TECHNOLOGIES IN SURGERY	Asst. Prof. Dr. Vladimir Vukomanovic Asst. Prof. Dr. Branimir Radmanovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	14	**L**	INFORMATION TECHNOLOGIES IN PSYCHIATRY	Asst. Prof. Dr. Branimir Radmanovic Prof. Dr. Vladimir Janjic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic
	15	**L**	INFORMATION TECHNOLOGIES IN INFECTIOUS DISEASES	Prof. Dr. Vladimir Janjic Assoc. Prof. Dr. Snezana Radovanovic Asst. Prof. Dr. Vladimir Vukomanovic
		P	Methodology. Application in modern medicine.	asist. dr Milan Djordjic, dr Sladjana Veselinovic, dr Ermin Fetahovic

module	week	type	method unit name	teacher
			FINAL TEST	