



Future Medicine Medycyna Przyszłości

1. IMPRINT

Academic Year	2026/2027
Department	Faculty of Medicine
Field of study	Medicine
Main scientific discipline	Medical science
Study Profile	General academic
Level of studies	Uniform MSc
Form of studies	Full time studies
Type of module / course	Non compulsory
Form of verification of learning outcomes	Completion
Educational Unit / Educational Units	Department of Medical Informatics and Telemedicine 00-581 Warszawa, Litewska 14/16 phone (+48) 22 116 92 44 e-mail: zimt@wum.edu.pl
Head of Educational Unit / Heads of Educational Units	Andrzej Cacko, MD, PhD
Course coordinator	Joanna Michalik, MD, e-mail: joanna.michalik@wum.edu.pl
Person responsible for syllabus	Joanna Michalik, MD, e-mail: joanna.michalik@wum.edu.pl
Teachers	Andrzej Cacko, MD, PhD; andrzej.cacko@wum.edu.pl Joanna Michalik, MD; joanna.michalik@wum.edu.pl Emanuel Tataj, M.Sc.; emanuel.tataj@wum.edu.pl

2. BASIC INFORMATION

Year and semester of studies	IV-V year, winter and summer semester	Number of ECTS credits	2.00
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FORMS OF CLASSES	Number of hours	ECTS credits calculation
Contacting hours with academic teacher		
Lecture (L)		
Seminar (S)	30 (e-learning)	1.2
Classes (C)		
e-learning (e-L)		
Practical classes (PC)		
Work placement (WP)		
Unassisted student's work		
Preparation for classes and completions	20	0.8

3. COURSE OBJECTIVES

	Modern technologies are transforming the healthcare sector, and this transformation is inevitable. The course syllabus was developed in collaboration with Dr Bertalan Meskó of Semmelweis University in Budapest, Director of the Medical Futurist Institute and author of the scientific blog The Medical Futurist (medicalfuturist.com).
O1	This optional course aims to teach students how to use modern digital technologies effectively in their future professional practice. New technologies bring doctors closer to their patients, helping them better understand their patients, their lifestyles, and their needs. Moreover, they complement and enhance the doctor-patient relationship.
O2	We will discuss new diagnostic and treatment methods, explore the latest solutions presented at international medical trade fairs, and examine the safety considerations and legal framework surrounding the use of smartphones in everyday medical practice.

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING

Code and number of the effect of learning in accordance with standards of learning	Effects in the field of:
Knowledge – Graduate* knows and understands:	
B.W26.	basic information about technology and biostatistical methods used in medicine, including medical databases, spreadsheets and basics of computer graphics
B.W28.	applications of the contemporary telemedicine as a tool supporting a medical doctor's work
Skills– Graduate* is able to:	
B.U10.	use databases, including online databases, and search for the required information using provided tools

B.U13.	plan simple research and interpret the results and draw conclusions
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5. ADDITIONAL EFFECTS OF LEARNING *(non-compulsory)*

Number of effect of learning	Effects in the fields of:
Knowledge – Graduate knows and understands:	
K1	the process of the development of new specialities in the medical sciences and the achievements of leading representatives of Polish and global medicine
K2	legal regulations concerning the management of medical records, as well as the criminal, civil, and professional liability of physicians
Skills– Graduate is able to:	
S1	draw conclusions based on a critical analysis of medical and cybersecurity literature, including in English
Social Competencies – Graduate is ready for:	
SC1	using reliable sources of information
SC2	respecting medical confidentiality and patients' rights

6. CLASSES

Form of class	Class contents	Effects of Learning
(e-L) seminars	S1. – Seminar 1 – Introduction to Digital Medicine. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S2. – Seminar 2 – The Hospital of the Future. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S3. – Seminar 3 – Telemedicine from a Legal Perspective. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S4. – Seminar 4 – Ethical Aspects of Digital Medical Data. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S5. – Seminar 5 – Personal Privacy in the Medical Internet. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S6. – Seminar 6 – The Revolution of Digital Medicine. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S7. – Seminar 7 – Healthcare Management Using Modern Technologies. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S8. – Seminar 8 – The Future of Digital Technology. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S9. – Seminar 9 – Cutting-edge Medical Technologies. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.
	S10 – Seminar 10 – Course completion: Final test (MSQ). Questions cover the material from all seminars. Asynchronous e-learning, eWUM platform, specified weeks	B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.

7. LITERATURE

Obligatory

1. Lectures and educational materials prepared on WUM e-learning Platform.
2. Selected articles published on medicalfuturist.com

Supplementary

1. Ramez Naam: Apex. Angry Robot 2017
2. Aldous Huxley: Brave New World. RosettaBooks 2011
3. Dave Eggers: The Circle. Vintage Books 2014

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.	Completion of e-learning assignments and activities	Completion of e-learning modules - obtaining at least 51% of the points in the indicated assignments and activities.
B.W26., B.W28., B.U10., B.U13., K1, K2, S1, SC1, SC2.	Final test (online) – questions covering the material from all seminars.	Obtain at least 51% of the points. The final grade is a mark of the e-test and seminars. Grade range: 2.0 (ndst) - up to 51% of points, 3.0 (dst) - 51.1%-60% of points, 3.5 (ddb) - 60.1%-70% of points, 4.0 (db) - 70.1%-80% of points, 4.5 (pdb) - 80.1%-90% of points, 5.0 (bdb) - above 90% of points.

9. ADDITIONAL INFORMATION

The minimum number of students required to start the optional course in a given semester is 20.
An unlimited number of students can participate in the optional course.

Seminars schedule:

Materials will be provided sequentially.

In the summer semester (Edition 1), starting on 29 February, 2027. The course will end on 6 June, 2027.

All course topics and credits are completed via eWUM (e-learning.wum.edu.pl), the university's e-learning platform.

Before the course begins, each student must verify that they can log in to the WUM Platform. If you encounter any login problems, please get in touch with the person responsible for the platform's operation (e-learning@wum.edu.pl).

Please direct technical issues related to the course, as well as any questions or requests, to the course instructor: Joanna Michalik; joanna.michalik@wum.edu.pl.

The course consists of nine online seminars and a final test covering all seminars.

Each participant has three attempts at the final test. The higher score counts toward the grade.

The course grade is determined by the final test score and the grade for the assignment completed in the workshop the student chooses. The final grade is the average of both scores, provided that neither score is a failing grade.

If a student cannot take the final exam by the designated deadline, they must email the course instructor to request an excused absence. The student must submit the request no later than three [3] days after the circumstances that prevented them from taking

the final test occurred. Failure to submit the request by the specified deadline will result in the absence being considered unexcused. You may submit an excuse after the deadline if you were unable to submit it for valid reasons; in such cases, submit the document as soon as the reason for the absence ceases to exist.

An unexcused absence from the final exam constitutes grounds for recording a failure for the course in the given term.

If a student has an excused absence from the final exam, they may take the exam on the next date scheduled by the department.

If a student receives a failing grade, they are entitled to two make-up exam dates. If a student fails to pass the course by the final date set by the department in a given academic year, they will not receive credit for the course.

The department also has a Students' Club MedIT, which brings together students who want to improve their knowledge of medical informatics, artificial intelligence, and advanced computer methods in medicine.

If you are interested, please get in touch with the tutor: Jakub Rokicki (jakub.rokicki@wum.edu.pl).

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ATTENTION

The final 10 minutes of the last class of the block/semester/year should be allotted for students to fill out the Survey of Evaluation of Classes and Academic Teachers