



Critical thinking – wake up your inner critic

Krytyczne myślenie – obudź swojego wewnętrznego krytyka

1. IMPRINT	
Academic Year	2026/2027
Department	Faculty of Medicine
Field of study	Medicine
Main scientific discipline	Medical sciences
Study Profile	General academic
Level of studies	Uniform MSc
Form of studies	Full time studies
Type of module / course	Non-compulsory (optional)
Form of verification of learning outcomes	Completion
Educational Unit / Educational Units	Zakład Informatyki Medycznej i Telemedycyny ul. Litewska 14/16, 00-581 Warszawa, pokój 317, III piętro tel. (+48) 22 116 92 44, (+48) 22 116 92 43, http://zimit.wum.edu.pl/ e-mail: zimt@wum.edu.pl
Head of Educational Unit / Heads of Educational Units	Dr hab. n. med. Andrzej Cacko
Course coordinator	Lek. Jakub Rokicki e-mail: jakub.rokicki@wum.edu.pl
Person responsible for syllabus	Lek. Jakub Rokicki e-mail: jakub.rokicki@wum.edu.pl
Teachers	Lek. Jakub Rokicki e-mail: jakub.rokicki@wum.edu.pl

2. BASIC INFORMATION

Year and semester of studies	I-III year, winter & summer semester	Number of ECTS credits	2.00
FORMS OF CLASSES	Number of hours	ECTS credits calculation	
Contacting hours with academic teacher			
Lecture (L)			
Seminar (S)	30 (e-learning)	1.20	
Classes (C)			
e-learning (e-L)			
Practical classes (PC)			
Work placement (WP)			
Unassisted student's work			
Preparation for classes and completions	20	0.80	

3. COURSE OBJECTIVES

O1	Formulation of conclusions
O2	Identification of correct arguments
O3	Skills of critical thinking and fact interpretation

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: <i>(in accordance with appendix to the Regulation of Minister of Science and Higher education from 29th of September 2023)</i>
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Knowledge – Graduate* knows and understands:

B.W26	principles of research for the advancement of medicine.
B.W23	basic IT and biostatistical tools used in medicine;
B.W24	basic methods of statistical analysis used in population and diagnostic studies;

Skills– Graduate* is able to:

B.U10	classify scientific research methodology, including distinguishing between experimental and observational studies with their sub-types, ranking them according to the reliability of the results provided and correctly assessing the strength of scientific evidence;
B.U8	use medical databases and correctly interpret the information they contain to solve problems in basic and clinical sciences;

* In appendix to the Regulation of Minister of Science and Higher education from 29th of September 2023 „graduate”, not student is mentioned.

5. ADDITIONAL EFFECTS OF LEARNING <i>(non-compulsory)</i>	
Number of effect of learning	Effects in the fields of:
Knowledge – Graduate knows and understands:	
K1	Structure of correct argument
K2	Formulation argumentation in specific subjects
Skills– Graduate is able to:	
S1	Formulate a logical expression
S2	Identify flawed arguments
S3	Approach problems in everyday life in methodical manners
Social Competencies – Graduate is ready for:	
SC1	Identify deficits in knowledge and educational needs
SC2	Conduct an academic discussion on high substantive grounds

6. CLASSES		
Form of class	Class contents	Effects of Learning
Seminar	History of critical thinking and reasoning. Socrates.Plato. Aristotle. St Augustine. Thomas Aquinas. Occam's razor. Rene Descartes. Socratic Questioning - practice. Illumination. Deduction. Induction.	B.W26, B.U10, D.W19, D.U5
	History of critical thinking and reasoning. English empiricism. John Locke, David Hume. Sensualism. Rationalism and Immanuel Kant. A priori and a posteriori propositions. Analytical and synthetical propositions.	B.W26, B.U10, D.W19, D.U5
	Objects of critical thinking. Claims and statements. Facts, falsification, opinions. Varieties of claim.	B.W26, B.U10, D.W19, D.U5

	Assessing claims. Grounds, reasons, and evidence. Statistical evidence. Outcomes presentation. Inference and explanation	B.W24, B.U9, B.W23, D.W19, D.U5
	Inference and explanation. Identifying argument. Analysing argument. Interpretation. Assumptions	B.W26, B.U10, D.W19, D.U5
	Evaluating argument. Describing flaws and weaknesses	B.U10, D.W19, D.U5
	Appeals. Conditions and conditionals. Hypothetical reasoning. Confusing necessary and sufficient conditions	B.U10, D.W19, D.U5
	Constructing argument. Analogies and their use. Planning a longer text. Sources	D.U5, B.U8, B.W26
	Verification of hypotheses Construction of a scientific source Assessment of a scientific source	B.W26, B.U10, D.U5, B.U8
	Essay writing workshop. Selection of references. Use of reference organization software.	D.U5, B.U8
	Problem solving – introduction Problem identification Selecting and using information	B.U10, D.W19, D.U5, B.U8
	Processing data Working with models	B.W23, B.W24, B.U9
	Solving problems by searching. Writing an essay - practical exercises. Construction of a longer text. Providing a structured argumentation. Employing online databases for search and support of the thesis.	B.U8, D.U5, B.W26, B.U10
	Finding methods of solution	B.U10, D.W19, D.U5
	Trends in data. Transforming data. Summarised data. Necessary and sufficient conditions. Changing the scenario of a problem.	B.W23, B.W24, B.U9, B.U10

7. LITERATURE

Obligatory

1. Presentation and materials provided during the classes
2. R. Alfaro-LeFevre Critical Thinking, Clinical Reasoning, and Clinical Judgment

Supplementary

C. Patterson Critical Thinking And Problem Solving: Advanced Strategies and Reasoning Skills to Increase Your Decision Making. A Systematic Approach to Master Logic

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
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B.W26, B.W23, B.W24, D.W19, B.U8, B.U9, B.U10, D.U5, K1, K2	Watching seminars with subsequent solving tasks and tests provided during the classes	60% points
S2, D.U5, B.U10	Discussion and argumentation competences during the classes	Starting the course
K1, K2, S1, S3, B.U8, B.U9, D.U5	Assessments of tasks and tests provided during the course	Providing responses on time
SC1, SC2	Individual marking of the participants	Attendance

9. ADDITIONAL INFORMATION

1. Classes are held as e-classes: an asynchronous online e-learning course on the WUM e-learning platform (use of distance learning techniques).
2. Materials are published on the platform www.e-learning.wum.edu.pl. Each student is asked to check before the course whether they can log on to the WUM Platform. In case of problems, please contact the person responsible for the course: Jakub Rokicki (jakub.rokicki@wum.edu.pl).
3. The course is delivered in the summer semester of the academic year 2026/2027. After the course is opened, the student will have access to the course: "Critical thinking - informed decisions 2026/2027". After accessing the course, the student is required to read the detailed information in the course. Watching all seminars is mandatory to proceed to tests.
4. The course should be started within 4 weeks of the opening of the course. Completion of the last assignments in the course should take place no later than the end date of the course, i.e. 31.01.2027 (winter) and 13.06.2027 (spring).
5. Closing date of the course: 31.01.2027 winter, 13.06.2027 spring semester.
6. Maximum number of students: 60. Minimum number of students required to run the course: 20.
7. Continuous contact with the tutor via e-mail is possible during the course: Jakub Rokicki (jakub.rokicki@wum.edu.pl).
8. At the Department there is a Students' Club MedIT which associates students willing to improve their knowledge about medical informatics, artificial intelligence and using advanced computer methods in medicine. If you are interested, please contact 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