



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 jakub.rokicki@wum.edu.pl
Person responsible for syllabus	Lek. Jakub Rokicki jakub.rokicki@wum.edu.pl
Teachers	Lek. Jakub Rokicki jakub.rokicki@wum.edu.pl

2. BASIC INFORMATION

Year and semester of studies	IV-V 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 26th of July 2019)</i>
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Knowledge – Graduate* knows and understands:

B.W29.	rules and methods of conducting scientific research, observational and experimental, as well as in vitro studies leading to development of Medicine
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Skills– Graduate* is able to:

B.U10.	Using databases, including web-based, and search for information needed with use of available tools
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* In appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019 „graduate”, not student is mentioned.

5. ADDITIONAL EFFECTS OF LEARNING *(non-compulsory)*

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.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	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.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Objects of critical thinking. Claims and statements. Facts, falsification, opinions. Varieties of claim.	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Assessing claims. Grounds, reasons, and evidence. Statistical evidence. Outcomes presentation. Inference and explanation	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Inference and explanation. Identifying argument. Analysing argument. Interpretation. Assumptions	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Evaluating argument. Describing flaws and weaknesses	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2

	Appeals. Conditions and conditionals. Hypothetical reasoning. Confusing necessary and sufficient conditions	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Constructing argument. Analogies and their use. Planning a longer text. Sources	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Verification of hypotheses Construction of a scientific source Assessment of a scientific source	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Essay writing workshop. Selection of references. Use of reference organization software.	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Problem solving – introduction Problem identification Selecting and using information	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Processing data Working with models	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	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.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Finding methods of solution	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2
	Trends in data. Transforming data. Summarised data. Necessary and sufficient conditions. Changing the scenario of a problem.	B.W29, B.U10, K1, K2, S1, S2, S3, SC1, SC2

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
B.W29, B.U10, K1, K2, S1, S2, S3	Watching seminars with subsequent solving tasks and tests provided during the classes	60% points
S3	Discussion and argumentation competences during the classes	Starting the course
B.W29, B.U10, K1, K2, S1, S3	Assessments of tasks and tests provided during the course	Providing responses on time

SC1, SC2	Individual marking of the participants	Attendance
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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