



## Critical thinking – wake up your inner critic

### 1. IMPRINT

<b>Academic Year</b>	2023/2024
<b>Department</b>	Faculty of Medicine
<b>Field of study</b>	Medicine
<b>Main scientific discipline</b>	Medical sciences
<b>Study Profile</b>	General academic
<b>Level of studies</b>	Uniform MSc
<b>Form of studies</b>	Full time studies
<b>Type of module / course</b>	Obligatory
<b>Form of verification of learning outcomes</b>	Credit
<b>Educational Unit / Educational Units</b>	Department of Medical Informatics and Telemedicine 00-581 Warsaw, 14/16 Litewska St., III floor phone (+48) 22 116 92 44, (+48) 22 116 92 43 <a href="http://zimit.wum.edu.pl/">http://zimit.wum.edu.pl/</a> e-mail: <a href="mailto:zimt@wum.edu.pl">zimt@wum.edu.pl</a>
<b>Head of Educational Unit / Heads of Educational Units</b>	<b>Dr hab. n. med. Andrzej Cacko</b>
<b>Course coordinator (</b>	<b>Lek. Jakub Rokicki</b> e-mail: <a href="mailto:jakub.rokicki@wum.edu.pl">jakub.rokicki@wum.edu.pl</a>
<b>Person responsible for syllabus</b>	<b>Lek. Jakub Rokicki</b> e-mail: <a href="mailto:jakub.rokicki@wum.edu.pl">jakub.rokicki@wum.edu.pl</a>
<b>Teachers</b>	<b>Lek. Jakub Rokicki</b> e-mail: <a href="mailto:jakub.rokicki@wum.edu.pl">jakub.rokicki@wum.edu.pl</a>

## 2. BASIC INFORMATION

<b>Year and semester of studies</b>	I, II, III, IV, V year, summer and winter semester	<b>Number of ECTS credits</b>	2.00
<b>FORMS OF CLASSES</b>		<b>Number of hours</b>	<b>ECTS credits calculation</b>
<b>Contacting hours with academic teacher</b>			
Lecture (L)			
Seminar (S)		30 (e-learning)	1.00
Classes (C)			
e-learning (e-L)			
Practical classes (PC)			
Work placement (WP)			
<b>Unassisted student's work</b>			
Preparation for classes and completions		30	1.00

## 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

<b>Code and number of effect of learning in accordance with standards of learning</b>	<b>Effects in time</b> <i>(in accordance with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)</i>
<b>Knowledge – Graduate* knows and understands:</b>	
B.W29.	rules and methods of conducting scientific research, observational and experimental, as well as in vitro studies leading to development of Medicine
<b>Skills– Graduate* is able to:</b>	
B.U10.	Using databases, including web-based, and search for information needed with use of available tools

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

Number of effect of learning	Effects of learning in time
<b>Knowledge – Graduate knows and understands:</b>	
G.K1	Structure of correct argument
G.K2	Formulation argumentation in specific subjects
<b>Skills– Graduate is able to:</b>	
G.S1	Formulate a logical expression
G.S2	Identify flawed arguments
G.S3	Approach problems in everyday life in methodical manners
<b>Social Competencies – Graduate is ready for:</b>	
SC1	Identify deficits in knowledge and educational needs
SC2	Conduct an academic discussion on high meritorical grounds

## 6. CLASSES

Form of class	Class contents	Effects of Learning
Seminars	S1. 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., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S2. 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., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S3. Objects of critical thinking. Claims and statements. Facts, falsification, opinions. Varieties of claim.	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S4. Assessing claims. Grounds, reasons, and evidence. Statistical evidence. Outcomes presentation. Inference and explanation	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S5. Inference and explanation. Identifying argument. Analysing argument. Interpretation. Assumptions	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S6. Evaluating argument. Describing flaws and weaknesses	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S7. Appeals. Conditions and conditionals. Hypothetical reasoning. Confusing necessary and sufficient conditions	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S8. Constructing argument. Analogies and their use. Planning a longer text. Sources	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S9. Verification of hypotheses Construction of a scientific source Assessment of a scientific source	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2

	Essay writing workshop. Selection of references. Use of reference organization software.	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S10. Problem solving – introduction Problem identification Selecting and using information	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S11. Processing data Working with models	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S12. 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., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S13. Finding methods of solution	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2
	S14. Trends in data. Transforming data. Summarised data. Necessary and sufficient conditions. Changing the scenario of a problem.	B.W29., B.U10., G.K1, G.K2, G.S1, G.S2, G.S3, SC1, SC2

## 7. LITERATURE

### Obligatory

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

### Supplementary

1. 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., G.K1, G.K2, G.S1, AG.S2, G.S3	Solving tasks and tests provided during the classes	51% points
G.S3	Discussion and argumentation competences during the classes	Starting the course
B.W29., B.U10., G.K1 G.K2, G.S1, G.S1, G.S3	Assessment 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 (use of distance learning techniques).
2. materials are published on the platform [www.e-learning.wum.edu.pl](http://www.e-learning.wum.edu.pl). I kindly ask each student to check before class if 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](mailto:jakub.rokicki@wum.edu.pl)).
3. After this date, the student will have access to the course: "Critical thinking - informed decisions 2023/2024". After accessing the course, the student is required to read the detailed information on the course.
- 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. 10.01.2024.
5. closing date of the course: 10.01.2024.
6. continuous contact with the tutor via e-mail is possible during the course: Jakub Rokicki ([jakub.rokicki@wum.edu.pl](mailto:jakub.rokicki@wum.edu.pl)).

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**ATTENTION**

The final 10 minutes of the last class in the block/semester/year should be allocated to students' Survey of Evaluation of Classes and Academic Teachers.