UNIVERSITATEA BABEŞ-BOLYAI
BABEŞ-BOLYAI TUDOMÁNYEGYETEM
BABEŞ-BOLYAI UNIVERSITÄT
BABEŞ-BOLYAI UNIVERSITY
TRADITIO ET EXCELLENTIA

Course syllabus

Academic year 2025-2026

1. Information about the program

1.1 Higher Education Institution	**Babeş-Bolyai University**
1.2 Faculty	**History and Philosophy**
1.3 Department	**Philosophy**
1.4 Field of study	**Matematics**
1.5 Study level	**Master**
1.6 Programme of study/ Qualification	**COMPUTATIONAL MATHEMATICS**

2. Information about the discipline

2.1 Title	**Fundamentals of humanistic education (Argumentation theory)**						
2.2 Course holder	**Lecturer Dr. Mihai Rusu**						
2.3 Seminar holder							
2.4 Year of study		2.5 Semester	**1**	2.6. Type of assessment[1]	**ME**	2.7 Type of module[2]	**F**

3. Total estimated time (teaching hours per semester)

3.1 No. of hours per week	**2**	3.2 of which for course	**2**	3.3 of which for seminar	**0**
3.4 Total no. of hours in the curriculum	**28**	3.5 of which for course	**28**	3.6 of which for seminar	**0**

Time distribution:	Hours
Study by using handbook, reader, bibliography and course notes	17
Additional library/specialised online research, field research	8
Preparation of seminars/laboratories, homework, projects, portfolios and essays	15
Tutoring	5
Examinations	2
Other activities:	

3.7 Total no. of hours for individual study	47
3.8 Total no. of hours per semester	75
3.9 No. of ETCS credit points	3

4. Prerequisites (where applicable)

4.1 of curriculum	❖ -
4.2 of competencies	❖ -

5. Conditions (where applicable)

5.1 For the development of the course	❖ Online course conducted through the MS Teams platform
5.2 For the development of the seminar/laboratory	❖

[1] E - exam, ME - multi-term examinations, C - collocutional examination/assessment test
[2] OB - core module, OP - elective module, F - extracurricular module

6. Specific skills acquired

Professional skills	**Knowledge and understanding** ❖ Evaluate the validity of arguments using semantic/analytic tableaux ❖ Evaluate the validity of arguments using the truth table method ❖ Construct rigorous proofs using natural deduction systems ❖ Evaluate the soundness of arguments ❖ Discern various types of reasoning ❖ Discern the logical structure of arguments/reasonings ❖ Identify hidden assumptions and/or premises in arguments and reasonings **Explanation and interpretation** ❖ Interpret arguments, ideas, theses, according to the principle of charity ❖ Explain key concepts and distinctions in the logical approach to arguments/reasoning **Instrumental - applicative** ❖ Use semantic/analytic tableaux to determine the validity of arguments/reasonings ❖ Use truth tables to determine the validity of arguments/reasonings ❖ Use natural deduction systems to construct rigorous proofs ❖ Supplement precarious arguments/reasonings in order to become valid/sound ❖ Develop valid, sound, arguments in scientific writing **Attitude** ❖ Manifest a critical-thinking approach to discourses, ideas, theses, arguments, generally, to available information. ❖ Manifest an analytical-thinking approach to problems, puzzles, etc. ❖ Manifest a scientifically-oriented approach.
Interdisciplinary skills	❖ Develop rigorous, sound, evidence-based arguments ❖ Identify fallacies and biases in scientific/everyday discourses ❖ Identify the logical joints, hidden assumptions, and premises of arguments ❖ Logically and critically evaluate arguments ❖ Asses the consistency of beliefs, ideas, theses, and premises ❖ Use a critical thinking approach to discourses, ideas, arguments, problems ❖ Develop analytic thinking skills ❖ Structure information in a sound logical manner ❖ Communicate ideas and arguments eloquently and more effectively

7. Course objectives (based on list of acquired skills)

7.1 General objective	❖ Familiarize students with the formal and informal procedures for evaluating arguments. ❖ Familiarize students with logical and cognitive approaches to reasoning.

7.2 Specific objectives	❖ Present traditional, truth table-based, and state of the art (semantic/analytic tableaux) proof procedures for testing the validity of arguments/the consistency of propositions/beliefs, and automated reasoning software based on semantic/analytic tableaux. ❖ Present a version of natural deduction for propositional logic and proof assistants for natural deduction. ❖ Classify and present criteria for evaluating reasonings. ❖ Classify and identify logical fallacies. ❖ Classify and identify reasoning/cognitive biases.

8. Contents

8.1 Course	Teaching methods	Observations
1. Identifying arguments. The general structure of arguments. Argument evaluation: basic concepts and distinctions. *Keywords*: premises, conclusion, premise indicators, conclusion indicators, semantic and structural ambiguities, truth values.	Presentation, conceptual clarifications.	
2. Types of reasoning. Applications. *Keywords*: deductive reasoning, inductive reasoning, abductive reasoning.	Presentation, knowledge synthesis, conceptual clarification, practical activities, group activities, guided discovery.	
3. Modeling arguments: fundamental distinctions. *Keywords*: serial arguments, convergent arguments, divergent arguments.	Presentation, knowledge synthesis, conceptual clarifications.	
4. Nuts and bolts of propositional logic. *Keywords*: sentences, propositions, atomic sentences, compound sentences, logical connectives, regimenting sentences in propositional logic, regimenting arguments in propositional logic	Presentation, knowledge synthesis, conceptual clarifications, practical activities, group activities, guided discovery.	
5. Modeling arguments in propositional logic. Applications. *Keywords*: truth tables, semantic tableaux rules/analytic tableaux rules, validity tests.	Presentation, knowledge synthesis, conceptual clarifications, practical activities.	

6. Modeling arguments in modal propositional logic. Applications. *Keywords*: analytic tableaux rules, validity tests.	Presentation, knowledge synthesis, conceptual clarifications, practical activities, group activities, guided discovery.	
7. Logical fallacies: fallacies of relevance. *Keywords*: formal and informal fallacies, fallacies of relevance.	Presentation, conceptual clarifications, practical activities.	
8. Logical fallacies: fallacies in causal reasoning. *Keywords*: causal fallacies, correlation, spurious correlation, spurious causation, mediation, moderation.	Presentation, conceptual clarifications, practical activities.	
9. Biases in reasoning. *Keywords*: anchoring bias, apophenia etc.	Presentation, conceptual clarifications, practical activities, group activities, guided discovery.	
10. Biases in research. *Keywords*: confirmation bias, availability bias, etc.	Presentation, conceptual clarifications, practical activities, group activities, guided discovery.	
11. The branches of rhetoric. The cannons. The appeals. Case studies. *Keywords*: forensic/judicial rhetoric, epideictic/display rhetoric, deliberative rhetoric, invention/discovery, arrangement, style, memory, delivery, ēthos, pathos, logos.	Presentation, conceptual clarifications, practical activities, group activities, guided discovery.	
12. Traditional rhetorical devices and effects. Applications. *Keywords*: rhetorical question, metaphor, irony, analogy, anaphora, apophasis, diasyrmus, etc.	Presentation, conceptual clarifications, practical activities.	
13. Contemporary techniques of manipulation. Applications. *Keywords*: manipulation in social-media, the rhetoric of advertising, etc.	Presentation, conceptual clarifications, practical activities.	
14. Review of the topics. Significance and relevance.	Debate, interactive teaching.	

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Stanley F. (2016) Winning Arguments: What Works and Doesn't Work in Politics, the Bedroom, the Courtroom, and the Classroom, New York: Harper.

Stanovich, K. E. (1999). Who is Rational? Studies of Individual Differences. Mahwah, NJ: Lawrence Erlbaum Associates.

Stenning, K. (2002). Seeing Reason: Image and Language in Learning to Think. Oxford: Oxford University Press.

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Toye, R. (2013). Rhetoric. A Very Short Introduction, Oxford: Oxford University Press.

Walton, D. (2006). Fundamentals of Critical Argumentation. Cambridge, U.K: Cambridge University Press.

8.2 Seminar/Laboratory	Teaching methods	Observations

9. The correspondence between the content of the course and the expectations of the academic community, professional associations and representative employers in the field:

The course develops analytic thinking skills coupled with a critical-thinking and scientifically-oriented approach to discourses, ideas, arguments, problems. The course also offers state of the art research skills that are transferable to any scientific and applied field of knowledge

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Percentage of the final grade
10.4 Course	Writing examinations (3 Multiple Choice Tests)	Evaluation of the tests	90
10.5 Seminar/ Laboratory			
			Ex officio: 1 point
10.6 Minimum standard of performance			
For grade 5: obtain cumulatively 4 points at the examinations.		For grade 10: obtain cumulatively 9 points at the examinations.	

Date
16.09.2024
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Course holder signature

Seminar holder signature

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Date of departmental approval

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Head of department signature

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