

SYLLABUS

Academic ethics and integrity. Methodology of scientific research

University year **2025-2026**

1. Information regarding the programme

1.1. Higher education institution	Babeş-Bolyai University
1.2. Faculty	Mathematics and Computer Science
1.3. Department	Computer Science
1.4. Field of study	Computer Science
1.5. Study cycle	Master
1.6. Study programme/Qualification	High Performance Computing and Big Data Analytics
1.7. Form of education	Full time

2. Information regarding the discipline

2.1. Name of the discipline	Academic ethics and integrity. Methodology of scientific research			Discipline code	MME3150
2.2. Course coordinator	Assoc. prof. phd. Sanda-Maria AVRAM				
2.3. Seminar coordinator	Assoc. prof. phd. Sanda-Maria AVRAM				
2.4. Year of study	1	2.5. Semester	2	2.6. Type of evaluation	C
				2.7. Discipline regime	mandatory

3. Total estimated time (hours/semester of didactic activities)

3.1. Hours per week	4	of which: 3.2 course	2	3.3 seminar/laboratory/project	2
3.4. Total hours in the curriculum	56	of which: 3.5 course	28	3.6 seminar/laboratory/project	28
Time allotment for individual study (ID) and self-study activities (SA)					hours
Learning using manual, course support, bibliography, course notes (SA)					14
Additional documentation (in libraries, on electronic platforms, field documentation)					5
Preparation for seminars/labs, homework, papers, portfolios and essays					12
Tutorship					3
Evaluations					8
Other activities:					2
3.7. Total individual study hours	44				
3.8. Total hours per semester	100				
3.9. Number of ECTS credits	4				

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	

5. Conditions (if necessary)

5.1. for the course	• Class room equipped with video projector.
5.2. for the seminar /lab	• Classroom with video projector and internet-connected computers

6.1. Specific competencies acquired ¹

Professional/essential competencies	• Capability of analysis and synthesis of architecture requirements, project, implementation and testing of advanced computer science systems. • Understanding of specific processes in development of computer science systems having a high degree of performance.
Transversal competencies	• Eitic and fair behavior, committment to professional deontology; • Professional communication skills; concise and precise description, both oral and written, of professional results, negotiation abilities;

6.2. Learning outcomes

Knowledge	• The graduate knows and respects the ethical and legal principles and rules in scientific research.
Skills	• The graduate is able to analyse concrete educational situation in terms of general ethical principles and rules.
Responsibility and autonomy:	• The graduate proves the capacity to reflect over own learning resources.

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	• Understand the foundational principles of academic ethics and integrity, including plagiarism, data fabrication, authorship norms, and peer review. • Analyze ethical dilemmas in research through multiple frameworks • Develop strategies to uphold integrity in their own academic and professional work.
7.2 Specific objective of the discipline	• Construct ethically sound research proposals that address potential biases, harms, and transparency issues. • Defend a position on whether academic dishonesty can ever be justified.

8. Content

8.1 Course	Teaching methods	Remarks
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¹ One can choose either competences or learning outcomes, or both. If only one option is chosen, the row related to the other option will be deleted, and the kept one will be numbered 6.

1. Introduction to Academic Ethics & Integrity - Definitions, importance, and historical context - Overview of ethical frameworks (deontology, utilitarianism, virtue ethics) 2. Truthfulness in Academia: Sam Harris' <i>Lying</i> - Key arguments against deception - White lies, omissions, and their ethical implications 3. Plagiarism & Intellectual Honesty - Types of plagiarism (direct, self-plagiarism, mosaic) 4. Fabrication and falsification of data - Highly publicized cases (e.g., Stapel, Hwang Woo-suk) 5. Ethics of authorship and collaboration - Ghostwriting, authorship gifts, equity in credit 6. Peer review and bias - Conflicts of interest, implicit bias 7. Animal and human research ethics - Informed consent, harm minimization 8. Whistle-blowing and moral courage - Case studies (e.g., Theranos, Harvard's Marc Hauser) - Harris's argument on the cost of silence 9. Open science and accessibility - Equity in knowledge dissemination 10. Ethics in AI and emerging technologies - Algorithmic biases, deepfakes, and misinformation 11. Synthesis: Building an ethical academic life - Integrating Harris, ethics in general, and institutional policies - Personal integrity intentions	Exposure: description, explanation, examples, discussion of case studies	
12-13. Project defences	Exposure: description, explanation	
14. Quiz test		
Bibliography 1. Harris, Sam. <i>Lying</i>. Four Elephants Press, 2013. 2. ACM Code of Ethics and Professional Conduct, developed by the ACM Code 2018 Task Force, https://www.acm.org/code-of-ethics 3. ACM/IEEE-Computer Society. Software Engineering Code of Ethics and Professional Practice, https://www.acm.org/code-of-ethics/software-engineering-code/ 4. Council for Big Data, Ethics & Society. https://bdes.datasociety.net/ 5. Data & Society. https://datasociety.net/ 6. Vallor, Shannon, and William J. Rework. "An introduction to data ethics." Course module.) Santa Clara, CA: Markkula Center for Applied Ethics (2018). 7. Collmann, Jeff, and Sorin Adam Matei. "Ethical Reasoning in Big Data." Switzerland: Springer (2016): 4-18. 8. Mittelstadt, Brent Daniel, and Luciano Floridi, eds. The ethics of biomedical big data. Vol. 29. Cham: Springer, 2016. 9. Taylor, Linnet. "The ethics of big data as a public good: which public? Whose good?." Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 374.2083 (2016): 20160126. 10. Fairfield, Joshua AT, and Christoph Engel. "Privacy as a public good." Duke LJ 65 (2015): 385.		
8.2 Seminar/Laboratory	Teaching methods	Remarks
Study and discussion related to the course topics.	Dialogue, case studies, examples	

Bibliography

1. Harris, Sam. Lying. Four Elephants Press, 2013.
2. Herschel, Richard, and Virginia M. Miori. "Ethics & big data." *Technology in Society* 49 (2017): 31-36.
3. Buchanan, Elizabeth A. and Michael Zimmer, "Internet Research Ethics", *The Stanford Encyclopedia of Philosophy* (Winter 2023 Edition), Edward N. Zalta & Uri Nodelman (eds.), <https://plato.stanford.edu/archives/win2023/entries/ethics-internet-research/>
4. Floridi, Luciano, and Mariarosaria Taddeo. "What is data ethics?." *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 374.2083 (2016): 20160360.
5. Floridi, Luciano, and Mariarosaria Taddeo. "What is data ethics?." *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 374.2083 (2016): 20160360.
6. Metcalf, Jacob, and Kate Crawford. "Where are human subjects in big data research? The emerging ethics divide." *Big Data & Society* 3.1 (2016): 2053951716650211.
7. O'Leary, Daniel E. "Ethics for big data and analytics." *IEEE Intelligent Systems* 31.4 (2016): 81-84.
8. Richards, Neil M., and Jonathan H. King. "Big data ethics." *Wake Forest L. Rev.* 49 (2014): 393.
9. Zwitter, Andrej. "Big data ethics." *Big data & society* 1.2 (2014): 2053951714559253.
10. Moreno, Megan A., et al. "Ethics of social media research: Common concerns and practical considerations." *Cyberpsychology, behavior, and social networking* 16.9 (2013): 708-713.

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course is included in the curricula of the most prestigious universities abroad.
- The course content provides the basic ethical conduct established by ACM and IEEE, and the legal regulations of the European Union and Romania.

10. Evaluation

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	Quiz test	Exam	70%
10.5 Seminar/ laboratory	Project	Defence	30%
10.6 Minimum standard of performance			
• At least grade 5 (from a scale of 1 to 10).			

11. Labels ODD (Sustainable Development Goals)²

Not applicable.

² Keep only the labels that, according to the [Procedure for applying ODD labels in the academic process](#), suit the discipline and delete the others, including the general one for *Sustainable Development* – if not applicable. If no label describes the discipline, delete them all and write „*Not applicable.*”.

Date:

15.04.2025

Signature of course coordinator

Assoc. prof. phd. Sanda-Maria AVRAM

Signature of seminar coordinator

Assoc. prof. phd. Sanda-Maria AVRAM

Date of approval:

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Signature of the head of department

Assoc. prof. phd. Adrian STERCA