

## SYLLABUS

### 1. Information regarding the programme

1.1 Higher education institution	<b>Babeş Bolyai University</b>
1.2 Faculty	<b>Faculty of Mathematics and Computer Science</b>
1.3 Department	<b>Department of Computer Science</b>
1.4 Field of study	<b>Computer Science</b>
1.5 Study cycle	<b>Master</b>
1.6 Study programme / Qualification	<b>Data Science for Industry and Society</b>

### 2. Information regarding the discipline

2.1 Name of the discipline (en) (ro)			<b>Ethics and Academic Integrity in Data Science</b>				
2.2 Course coordinator			<b>Prof. PhD. Simona Motogna</b>				
2.3 Seminar coordinator			<b>Prof. PhD. Simona Motogna</b>				
2.4. Year of study	<b>1</b>	2.5 Semester	<b>1</b>	2.6. Type of evaluation	<b>C</b>	2.7 Type of discipline	<b>C</b>
2.8 Code of the discipline		MME8178					

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

3.1 Hours per week	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1sem+1 project
3.4 Total hours in the curriculum	56	Of which: 3.5 course	28	3.6 seminar/laboratory	28
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					10
Additional documentation (in libraries, on electronic platforms, field documentation)					12
Preparation for seminars/labs, homework, papers, portfolios and essays					12
Tutorship					4
Evaluations					6
Other activities: .....					
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	• Room with projector
5.2. for the seminar /lab activities	• Students should use laptops/computers for their presentations

### 6. Specific competencies acquired

<b>Professional competencies</b>	C3.4 Data and model analysis C3.5 Produce computational components for interdisciplinary projects
<b>Transversal competencies</b>	CT1 Apply rules to: organized and efficient work, responsibilities of didactical and scientific activities and creative capitalization of own potential, while respecting principles and rules for professional ethics CT2 Efficient organization of activities in an inter-disciplinary group and development of empathic communication, relational and collaboration abilities CT3 Use efficient methods and techniques for learning, knowledge gaining, and research and develop capabilities for capitalization of knowledge, accommodation to society requirements and communication in English

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

7.1 General objective of the discipline	<ul style="list-style-type: none"> <li>• Be able to understand and apply the regulations, law and ethical practices in Data Science</li> <li>• Detect intellectual property violations</li> <li>• Analyze risks and alternative decisions regarding ethical aspects of Data Science</li> </ul>
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> <li>• Be able to use ethical analysis methodologies</li> <li>• Critical abilities in identifying violation of domain's law</li> </ul>

## 8. Content

8.1 Course	Teaching methods	Remarks
1. Introduction to legal and ethical issues in Data Science	Exposure: description, debate	
2. Professional ethics	Exposure: description, debate, case studies, examples, dialogue	
3. Intellectual Property	Exposure: description, debate, case studies, examples, dialogue	
4. Ethical issues for data access, use, and collection	Exposure: description, debate, case studies, examples, dialogue	
5. Bias and Fairness	Exposure: description, debate, case studies, examples, dialogue	
6. Privacy, confidentiality and anonymization of data	Exposure: description, debate, case studies,	

	examples, dialogue	
7. Practical Tools	Exposure: description, debate, case studies, examples, dialogue	
8. Specificity of data from financial sector (invited topic)	Exposure: description, debate, case studies, examples, dialogue	
9. Specificity of data from economic sector (invited topic)	Exposure: description, debate, case studies, examples, dialogue	
10. Specificity of data in health (invited topic)	Exposure: description, debate, case studies, examples, dialogue	
11. Specificity of data in public sector (invited topic)	Exposure: description, debate, case studies, examples, dialogue	
12. Specificity of data in life science (invited topic)	Exposure: description, debate, case studies, examples, dialogue	
13. Presentations of students reports	Exposure: description, debate, case studies, examples, dialogue	
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Bibliography  ACM/IEEE-Computer Society. Software Engineering Code of Ethics and Professional Practice. Version 5.2. <a href="http://www.acm.org/about/se-code">http://www.acm.org/about/se-code</a>  Council for Big Data, Ethics & Society. <a href="http://bdes.datasociety.net/">http://bdes.datasociety.net/</a>  Data & Society. <a href="https://datasociety.net/">https://datasociety.net/</a>  Collmann, Jeff and Matai, Sorin Adam, Eds., (2016) Ethical Reasoning in Big Data: A Exploratory Analysis, Springer, 192 pages.  Mittelstadt, Brent and Floridi, Luciano, Eds. (2016) The Ethics of Biomedical Big Data, Springer, 480 pages.  Lane, Julia, et al., Eds., (2014) Privacy, Big Data, and the Public Good: Frameworks for Engagement, Cambridge University Press, 339 pages.		

8.2 Seminar / laboratory	Teaching methods	Remarks
1. Debate between teams of students on topics from course: ethics of profession, intellectual property	Debate, case studies, dialogue	
2. Debate between teams of students on topics from course: bias and fairness, confidentiality and privacy	Debate, case studies, dialogue	
3. Workshop on: anonymization	Debate, case studies, dialogue	
4. “Bonnie and Clyde”: famous cases in data breach / infringements	Debate, case studies, dialogue	
5. Debate between teams of students on topics from course: data in finance and economy, health and life sciences	Debate, case studies, dialogue	
6. Reading and discussion on selected papers from bibliography	Debate, case studies, dialogue	
7. Reading and discussion on selected papers from bibliography	Debate, case studies, dialogue	

### Bibliography

Herschel, Richard and Miori, Virginia (2017) “Ethics & Big Data,” Technology in Society 49, 31- 36.

Buchanan, Elizabeth and Zimmer, Michael (2016) “Internet Research Ethics,” The Stanford Encyclopedia of Philosophy, Edward N. Zalta (ed.), <https://plato.stanford.edu/entries/ethics-internet-research/>

Floridi, Luciano, and Taddeo, Mariarosaria (2016) “What is Data Ethics?” Philosophical Transactions of the Royal Society A, 374:2083, DOI: 10.1098/rsta.2016.0360. In special issue with the theme The Ethical Impact of Data Science, Taddeo and Floridi eds.

Metcalf, Jason and Crawford, Kate (2016) “Where are Human Subjects in Big Data Research? The Emerging Ethics Divide,” Big Data & Society 3:1, DOI: 10.1177/2053951716650211

O’Leary, Daniel E. (2016) “Ethics for Big Data and Analytics,” IEEE Intelligent Systems, 31:4, 81- 84.

Crawford, Kate, et al. (2014) “Critiquing Big Data: Politics, Ethics, Epistemology.” International Journal of Communication, 8:1663-1672.

Richards, Neil M. and King, Jonathan H. (2014) “Big Data Ethics,” Wake Forest Law Review. Available at SSRN: <https://ssrn.com/abstract=2384174>

Zwitter, Andrej (2014) “Big Data Ethics,” Big Data & Society, Jul-Dec, 1-6.

Moreno, M.A., et al. (2013) “Ethics of Social Media Research: Common Concerns and Practical Considerations.” Cyberpsychol Behav Soc Netw. 16(9):708-13. doi: 10.1089/cyber.2012.0334.

### 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 exists in the studying program of all major universities abroad;
- The content of the course is providing basic ethical conduct stated by ACM and IEEE, and legal regulations of EU and Romania

## 10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	Course activity during semester	Debates, case studies Report	10% 20%
	At the end of semester	Written paper (quiz)	10%
10.5 Seminar/lab activities	Seminar activity	Debates, case studies	30%
		Reading Contribution to case repository	10% 10%
10.6 Minimum performance standards			
<ul style="list-style-type: none"><li>➤ At least an average grade of 5</li><li>➤ To be able to identify data infringements cases and to propose counter-measures</li><li>➤ To be able to formulate arguments regarding ethical issues related to data</li></ul>			

Date  
27.04.2022

Signature of course coordinator  
Prof.PhD. Simona Motogna

Signature of seminar coordinator  
Prof.PhD. Simona Motogna

Date of approval  
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Signature of the head of department  
Prof.PhD. Laura Diosan