Syllabus

1. Program information

1.1. Institution	BUCHAREST UNIVERSITY OF ECONOMIC STUDIES
1.2. Faculty	Business Administration in Foreign Languages
1.3. Departments	Department of Economic Informatics and Cybernetics
1.4. Field of study	Business Administration
1.5. Cycle studies	Master Studies
1.6. Education type	Full-time
1.7. Program study	Digital Business and Innovation
1.8. Language study	English
1.9. Academic year	2021-2022

2. Course information

2.1. Name	**Artificial intelligence**								
2.2. Code									
2.3. Years of studies	**2**	2.4. Semester	**1**	2.5. Assessment type	**Exam**	2.6. Course type	**O (Mandatory)**	2.7. No. of ECTS	**6**
2.8. Leaders	Conf. Univ. Dr. Dragoș Vespan – dragos.vespan@ie.ase.ro								

3. Total estimated time

3.1. Number of weeks	14.00		
3.2. Number of hours per week	3.00	of which	
		C (C)	1.00
		S (S)	2.00
3.3. Total hours from curriculum	42.00	of which	
		C (C)	14.00
		S (S)	28.00
3.4. Total hours of study per semester (ECTS*25)	150.00		
3.5. Total hours of individual	108.00		
Time distribution for individual study			
Study the textbook, course support, bibliography and notes	20.00		
Further reading in the library, on the online platforms and field	45.00		
Preparing seminars, labs, homework, portfolios and essays	35.00		
Tutoring	3.00		
Examinations	4.00		
Other activities	1.00		

4. Prerequisites

4.1. About curriculum	Machine Learning
4.2. About skills	

5. Requirements

for C(C)	The lectures will be sustained in room equipped with teaching multimedia and connected to internet.
for S(S)	The lectures will be sustained in room equipped with teaching multimedia and connected to internet.

6. Skills covered

Professionals	C4	Development of competences for the evaluation and usage of computer applications and technologies
	C6	Development of innovation skills and innovative use of information technology in the application of specific methods, techniques and tools for business administration

7. Course objective

7.1. General objective	The course aims to develop students' knowledge and skills for extracting and processing information using artificial intelligence methods and techniques
7.2. Specific objectives	At the end of the course, students: - Will be able to identify artificial intelligence methods and techniques applicable to specific datasets - Will be able to prepare data for processing and use artificial intelligence software to process data and interpret the results.

8. Course contents

8.1. C(C)		Teaching methods	Advices
1	Introduction to Artificial intelligence	Lectures, practical examples, case studies	
2	Knowledge representation	Lectures, practical examples, case studies	
3	Intelligent agents. Languages and platforms for agents – part I	Lectures, practical examples, case studies	
4	Intelligent agents. Languages and platforms for agents – part II	Lectures, practical examples, case studies	
5	Predicate logic.	Lectures, practical examples, case studies	
6	Pattern recognition	Lectures, practical examples, case studies	
7	Decision trees – part I	Lectures, practical examples, case studies	
8	Decision trees – part II	Lectures, practical examples, case studies	
9	Bayesian networks – part I	Lectures, practical examples, case studies	
10	Bayesian networks – part II	Lectures, practical examples, case studies	

11	Natural Language Processing – part I	Lectures, practical examples, case studies	
12	Natural Language Processing – part II	Lectures, practical examples, case studies	
13	Semantic networks and ontologies	Lectures, practical examples, case studies	
14	Semantic Web	Lectures, practical examples, case studies	

Bibliography:

Data Mining : Concepts, Models and Techniques
Kacprzyk, Janusz; Gorunescu, Florin;and more Springer 2011
ISBN: ISBN number:9783642197208, ISBN number:9783642197215
SERIES: Intelligent Systems Reference Library

Knowledge Engineering for Software Development Life Cycles : Support Technologies and Applications
Ramachandran, Muthu IGI Global 2011
ISBN: ISBN number:9781609605094, ISBN number:9781609605100

Modeling and Simulation Fundamentals : Theoretical Underpinnings and Practical Domains
Sokolowski, John A.; Banks, Catherine M. John Wiley & Sons, Incorporated 2010
ISBN: ISBN number:9780470486740, ISBN number:9780470590614

Knowledge Engineering for Software Development Life Cycles : Support Technologies and Applications
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Introduction to Contextual Processing : Theory and Applications
Vert, Gregory; Iyengar, S. Sitharama;and more Chapman and Hall/CRC 2016
ISBN: ISBN number:9781439834688, ISBN number:9781439834695

8.2. S(S)		Teaching methods	Advices
1	Introductory seminar	Presentation of subjects approached at the seminar and discussion on project requirements.	
2	Building a predictive model using decision trees: Data import and cleaning	Exemplification on computers, practical exercises	
3	Building a predictive model using decision trees: Dividing data into training and test sets and cross-validation sets.	Exemplification on computers, practical exercises	
4	Building a predictive model using decision trees: Data pre-processing and processing – part I	Exemplification on computers, practical exercises	
5	Building a predictive model using decision trees: Data pre-processing and processing – part II	Exemplification on computers, practical exercises	
6	Building a predictive model using decision trees: Model testing – part I	Exemplification on computers, practical exercises	

7	Building a predictive model using decision trees: Model testing – part II	Exemplification on computers, practical exercises	
8	Natural Language Processing: processing text corpuses – part I	Exemplification on computers, practical exercises	
9	Natural Language Processing: processing text corpuses – part II	Exemplification on computers, practical exercises	
10	Natural Language Processing: text classification – part I	Exemplification on computers, practical exercises	
11	Natural Language Processing: text classification – part II	Exemplification on computers, practical exercises	
12	Natural Language Processing: analysis of linguistic structure – part I	Exemplification on computers, practical exercises	
13	Natural Language Processing: analysis of linguistic structure – part II	Exemplification on computers, practical exercises	
14	Presentation of individual/group projects	Conclusions of seminar activities during the semester. Communicating individual student scores Explaining scores (if requested)	

Bibliography:

Modeling and Simulation Fundamentals : Theoretical Underpinnings and Practical Domains
Sokolowski, John A.; Banks, Catherine M. John Wiley & Sons, Incorporated 2010
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Introduction to Contextual Processing : Theory and Applications
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ISBN: ISBN number:9781439834688, ISBN number:978143983

Data Mining : Concepts, Models and Techniques
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SERIES: Intelligent Systems Reference Library

9. Course contents corroboration with the demands of epistemic community representatives, professional associations and representative employers

The course content was correlated with local business requirements and International during various professional meetings and debates where the Lecturer took part Lecturer.

10. Assessment

Activity	Assessment criteria	Assessment methods	Percentage in the final grade
10.1. S(S)	Progressive assessment	Active participation (10), simulations and a test	40.00

10.2. Final assessment	Summative assessment	Exam	60.00
10.3. Grading scale	Whole notes 1-10		
10.4. Minimum performance standard	Obtaining minimum 50 points		

Completion date,
09.12.2019

Instructors,