

COURSE OUTLINE

ARTIFICIAL INTELLIGENCE AND PRACTICAL APPLICATIONS IN HUMANITIES

1. GENERAL

SCHOOL	CLASSICS AND HUMANITIES		
DEPARTMENT/UPS	HUMANITIES / PHILOLOGY, HISTORY AND ANTHROPOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE – LEVEL 6		
COURSE CODE	XXXXX	SEMESTER	4 TH
COURSE TITLE	ARTIFICIAL INTELLIGENCE AND PRACTICAL APPLICATIONS IN HUMANITIES		
TEACHING ACTIVITIES <i>If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.</i>		TEACHING HOURS PER WEEK	ECTS CREDITS
		3	5
<i>Please, add lines if necessary. Teaching methods and organization of the course are described in section 4.</i>			
COURSE TYPE <i>Background, General Knowledge, Scientific Area, Skill Development</i>	SKILL DEVELOPMENT		
PREREQUISITES:	NO		
TEACHING & EXAMINATION LANGUAGE:	GREEK		
COURSE OFFERED TO ERASMUS STUDENTS:	YES		
COURSE URL:	https://eclass.duth.gr/courses/XXXXXX/		

2. LEARNING OUTCOMES

Learning Outcomes <i>Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.</i>	
Upon successful completion of the course, participants will be able to: <ul style="list-style-type: none"> • Explain the fundamental concepts of AI and their relation to the digital humanities. • Identify key AI technologies such as machine learning, natural language processing and data mining • Apply AI tools for data analysis, including text and image corpora • Critically evaluate the potential and limitations of AI, recognising the advantages and challenges that AI brings to research in the humanities • Work in interdisciplinary research teams to design and implement research projects in the digital humanities that make use of AI. 	
General Skills <i>Name the desirable general skills upon successful completion of the module</i>	
<i>Search, analysis and synthesis of data and information, ICT Use Adaptation to new situations Decision making Autonomous work Teamwork Working in an international environment Working in an interdisciplinary environment Production of new research ideas</i>	<i>Project design and management Equity and Inclusion Respect for the natural environment Sustainability Demonstration of social, professional and moral responsibility and sensitivity to gender issues Critical thinking Promoting free, creative and inductive reasoning</i>
<ul style="list-style-type: none"> • Search, analysis and synthesis of data and information, ICT Use • Autonomous work • Teamwork • Promoting free, creative and inductive reasoning • Production of new research ideas 	

- Working in an interdisciplinary environment

3. COURSE CONTENT

The course is divided into 13 weeks, the content of which is as follows:

1. Introduction to artificial intelligence
2. Artificial intelligence in the digital humanities
3. Text mining and natural language processing in the digital humanities
4. Machine learning and pattern recognition in historical data
5. Sentiment analysis and its applications in literature
6. Artificial intelligence in archaeological research
7. Artificial intelligence for the preservation and analysis of cultural heritage
8. Image recognition and analysis of visual data
9. Artificial intelligence and oral history
10. Generative artificial intelligence
11. AI applications in education
12. Applications of artificial intelligence in interdisciplinary research projects
13. Emerging trends in artificial intelligence

4. LEARNING & TEACHING METHODS - EVALUATION

<p>TEACHING METHOD <i>Face to face, Distance learning, etc.</i></p>	<ul style="list-style-type: none"> • Lectures • Active learning (hands-on learning) - Experiential learning • Collaborative learning 													
<p>USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) <i>Use of ICT in Teaching, in Laboratory Education, in Communication with students</i></p>	<ul style="list-style-type: none"> • Digital assessment tools • Online collaboration tools • Use of ICT in teaching and communication with students • PPT presentations • Teaching material, announcements and communication through the eClass platform • Communication with students via email 													
<p>TEACHING ORGANIZATION <i>The ways and methods of teaching are described in detail. Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc.</i></p> <p><i>The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.</i></p>	<table border="1"> <thead> <tr> <th data-bbox="639 1149 967 1184">Activity</th> <th data-bbox="975 1149 1299 1184">Workload/semester</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 1189 967 1225">Lectures</td> <td data-bbox="975 1189 1299 1225">39</td> </tr> <tr> <td data-bbox="639 1229 967 1265">Essay</td> <td data-bbox="975 1229 1299 1265">60</td> </tr> <tr> <td data-bbox="639 1270 967 1323">Study and analysis of bibliography</td> <td data-bbox="975 1270 1299 1323">49</td> </tr> <tr> <td data-bbox="639 1328 967 1364">Written examination</td> <td data-bbox="975 1328 1299 1364">2</td> </tr> <tr> <td data-bbox="639 1368 967 1404">Total</td> <td data-bbox="975 1368 1299 1404">150</td> </tr> </tbody> </table>		Activity	Workload/semester	Lectures	39	Essay	60	Study and analysis of bibliography	49	Written examination	2	Total	150
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<p>STUDENT EVALUATION <i>Description of the evaluation process</i></p> <p><i>Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others</i></p> <p><i>Please indicate all relevant information about the course assessment and how students are informed</i></p>	<p>Essay (compulsory): 50%</p> <p>Final written examination: 50%</p>													

5. SUGGESTED BIBLIOGRAPHY

- Aggarwal, C. C. (2018). Νευρωνικά δίκτυα και βαθιά μάθηση. Εκδόσεις Fountas.
- Bilianos, D., & Mikros, G. (2023). Sentiment analysis in cross-linguistic context: How can

machine translation influence sentiment classification?. *Digital Scholarship in the Humanities*, 38(1), 23-33.

- Fiorucci, M., Khoroshiltseva, M., Pontil, M., Traviglia, A., Del Bue, A., & James, S. (2020). Machine learning for cultural heritage: A survey. *Pattern Recognition Letters*, 133, 102-108.
- Fontanella, F., Colace, F., Molinara, M., Di Freca, A. S., & Stanco, F. (2020). Pattern recognition and artificial intelligence techniques for cultural heritage. *Pattern Recognition Letters*, 138, 23-29.
- Hadi, M. U., Al Tashi, Q., Shah, A., Qureshi, R., Muneer, A., Irfan, M., ... & Shah, M. (2024). Large language models: a comprehensive survey of its applications, challenges, limitations, and future prospects. *Authorea Preprints*.
- Jaillant, L., & Caputo, A. (2022). Unlocking digital archives: cross-disciplinary perspectives on AI and born-digital data. *AI & society*, 37(3), 823-835.
- Miller, T. (2019). Explanation in artificial intelligence: Insights from the social sciences. *Artificial intelligence*, 267, 1-38.
- Nyhan, J., & Flinn, A. (2016). *Computation and the humanities: towards an oral history of digital humanities*.
- Pessanha, F., & Salah, A. A. (2021). A computational look at oral history archives. *ACM Journal on Computing and Cultural Heritage (JOCCH)*, 15(1), 1-16.
- Pitas, I. (2022) *Artificial Intelligence Science and Society / Part A: Introduction to AI Science and Information Technology: Part A: Introduction to AI Science and Information Technology*.
- Tamkin, A., Brundage, M., Clark, J., & Ganguli, D. (2021). Understanding the capabilities, limitations, and societal impact of large language models. *arXiv preprint arXiv:2102.02503*.
- Βλαχάβας, Ι., Κεφαλάς, Π., Βασιλειάδης, Ν., Κόκκορας, Φ., & Σακελλαρίου, Η. (2006). *Τεχνητή νοημοσύνη. Γ' Έκδοση. Γκιούρδας*.
- Παναγιωτακόπουλος, Χ., Τσαλίδης, Χ., Γάκης, Π., & Κόκκινος, Θ. (2022). *Υπολογιστική γλωσσολογία [Προπτυχιακό εγχειρίδιο]. Κάλλιπος, Ανοικτές Ακαδημαϊκές Εκδόσεις. <https://dx.doi.org/10.57713/kallipos-127>*

ANNEX OF THE COURSE OUTLINE

Alternative ways of examining a course in emergency situations

Teacher (full name):	XXXXXXXXXX
Contact details:	XXXXXXXXXX
Supervisors: (1)	YES
Evaluation methods: (2)	Essay (compulsory): 50% Final written examination: 50%
Implementation Instructions: (3)	The written exams will be conducted via the eClass platform on a date and time that will be announced in advance. Students will be informed of the exam duration and content well ahead of the scheduled exam. The assignment must be submitted through eClass by a specified deadline.

(1) Please write YES or NO

(2) Note down the evaluation methods used by the teacher, e.g.

➤ *written assignment* or/and exercises

➤ written or oral examination with distance learning methods, provided that the integrity and reliability of the examination are ensured.

(3) In the **Implementation Instructions** section, the teacher notes down clear instructions to the students:

a) in case of **written assignment and / or exercises**: the deadline (e.g. the last week of the semester), the means of submission, the grading system, the grade percentage of the assignment in the final grade and any other necessary information.

b) in case of **oral examination with distance learning methods**: the instructions for conducting the examination (e.g. in groups of X people), the way of administration of the questions to be answered, the distance learning platforms to be used, the technical means for the implementation of the examination (microphone, camera, word processor, internet connection, communication platform), the hyperlinks for the examination, the duration of the exam, the grading system, the percentage of the oral exam in the final grade, the ways in which the inviolability and reliability of the exam are ensured and any other necessary information.

c) in case of **written examination with distance learning methods**: the way of administration of the questions to be answered, the way of submitting the answers, the duration of the exam, the grading system, the percentage of the written exam of the exam in the final grade, the ways in which the integrity and reliability of the exam are ensured and any other necessary information.

There should be an attached list with the Student Registration Numbers only of students eligible to participate in the examination.