National and Kapodistrian University of Athens
Athena Research Centre
University of Cyprus

Guide to the Postgraduate Programme

M.Sc. Digital Humanities

Academic Year 2024 – 2025

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Secretary

Academic Calendar

- Autumn Semester: 30 September 2024 - 17 January 2025
- Christmas Holidays: 23 December 2024 - 7 January 2025
- Exams Period: 20 January 2025 - 31 January 2025
- Spring Semester: 10 February 2025 - 25 May 2025
- Easter Holidays: 12 April 2025 - 27 April 2025
- Exams Period: 26 Μαΐου 2025 έως και 6 Ιουνίου 2025

Holidays

- 28 October 2024
- 17 November 2025
- 30 January 2025
- 3 March 2025
- 25 March 2025
- 1 May 2025
- 9 June 2025

CONTENTS

1. INTRODUCTION 5
2. SUBJECT, PURPOSE, LEARNING OUTCOMES 6
3. ADMISSIONS 7
4. STUDY REGULATION 8
5. STUDENT EVALUATION 8
6. CURRICULUM 9
7. COURSES DESCRIPTION 14
8. TUITION FEES 31
9. STUDENT'S SERVICE 31

1. Introduction

The aim of the MSc in Digital Humanities is to offer scientific expertise and to be a starting point for the development and expansion of research in Digital Humanities, which is an evolving and of significant scientific, social and economic importance domain, necessary for the protection of the digital heritage internationally.

It offers three specializations:

- Data Analytics for Humanities
- 3D Technologies
- Augmented Textual Studies
- Geographic Information Sytems

The MSc in Digital Humanities is a joint postgraduate program offered by the following Institutions:

National and Kapodistrian University of Athens
Department of History and Archaeology
Department of Philology
Department of History and Philosophy of Science
Department of Digital Industry Technologies

University of Cyprus
Department of History and Archaeology

ATHENA Research Center
Institute for Language and Speech Processing

The official foundational act of the program can be found in the Hellenic Republic Government Gazzette no. 1560(B)/2024

2. Subject, Purpose, Learning Outcomes

The Program structure provides students with both the theoretical knowledge and practical skills needed in their field, together with a range of career opportunities in academia, research, cultural heritage, and beyond. The program is innovative and offers in-depth knowledge and expertise in the field of Digital Humanities (DH), designed for experts and enthousiasts in Philology, Archaeology, History, Philosophy, Informatics, and Information Science, among others.

Educational Objectives

Master Digital Tools: Gain proficiency in leading digital tools used globally across Museums, Libraries, Archives, and in the vibrant worlds of Multimedia.
GIS Expertise: Learn to leverage Geographical Information Systems (GIS) for innovative research.
Programming Foundations: Build essential programming skills tailored for a digital era.
Language Mastery: Dive into the essentials of Natural Language, Text, Handwritten Resources, and Markup Languages, becoming an adept specialist.
Data Science skils: Embrace the methodology behind Data Sciences, unlocking new perspectives in research.
Database Design and Digital Curation: Design and customize Databases and Data Repositories appropriate to the depands of your work and research, curating and managing digital data, repositories, and ensuring longevity and accessibility.
3D Technologies: Explore 3D technologies to bring Historical Objects, Monuments, and Landscapes to virtual life.
Digital Modelling: Craft digital models, breathing digital life into Cultural and Historical Artefacts.

Career and Opportunities

Editing and Publishing: Forge a path in the dynamic world of editing and publishing, where digital innovation meets traditional methods, dive into content creation, and multimedia storytelling, shaping the future of how we consume literature and academic works.

NLP Processing: Step into the cutting-edge field of Natural Language Processing (NLP), a cornerstone of Artificial Intelligence that powers everything from voice assistants to content analysis tools; transform vast amounts of text into structured data, and contribute to the development of technologies that understand, interpret, and generate human languages

Cultural Heritage: Make a lasting impact on cultural discovery, preservation and interpretation through digital technologies, engage in the digital transformation of Museums, Archives, and Historical sites, bringing the richness of the past to the global audience of the digital age, and specialize in digitizing artifacts, creating virtual tours, or developing interactive educational resources that bridge history and technology.

3. Admissions

During the period of April-May, an announcement for the admission of postgraduate students s published and posted on the websites of all participating Departments/organizers.

The applications with the necessary documents are submitted to the Program Secretariat, within a deadline specified in the announcement.

Necessary documents:
- Application for candidacy, in which the reasons for studying at the Program are set out, as well as the specialization in which the candidate is interested in studying. The candidate may indicate in his application more than one specialization in order of priority.
- Detailed CV.
- Copy of B.Sc. and any other degrees, master's and doctoral degrees from universities, or equivalent institutions.
- Publications in peer-reviewed scientific journals or conferences, if any.
- Evidence of scholarships and awards.
- Up to two recommendation letters.
- Evidence of professional or research activity, if any.
- Photocopy of two sides of the ID card.
- A recent photo.

The evaluation of the candidates and the selection of the admitted ones is based on the following criteria and with a rating scale from 0 to 100 evaluation points:

1. Bachelor's degree. The degree grade is multiplied by 4. Maximum number of credits: Forty (40). In case of having more than one degree, the degree with the highest grade is taken into account.
2. Grade in undergraduate courses or thesis related to Digital Humanities: Up to five (5) courses are chosen and/or the bachelor/diploma thesis with the highest grade, the score is added up them and the total is divided by five (5). Maximum number of hours: Ten (10).
3. Additional degrees, master's and doctoral degrees: Four (4) a.m. for each degree beyond the one considered in criterion (1), six (6) a.m. for holding a master's degree, ten (10) a.m. for possession of a doctoral degree, from the country or equivalent, recognized by DOATAP, from foreign institutions, in accordance with the applicable provisions. Maximum number of hours: Twenty (20).
4. Professional project: Two (2) a.m. per certified year of professional experience in a field related to the KPMS Maximum number of hours: Ten (10).
5. Knowledge of foreign languages: Four (4) credit points for the second foreign language Maximum number of hours: Ten (10).
6. Additional evaluation elements (publications in peer-reviewed scientific journals, or refereed conference proceedings, or scholarships, or other awards): Maximum number of credits: Ten (10), which are distributed per additional evaluation element at the discretion of the EU.

Successful candidates should register at the KPMS Secretariat within thirty (30) days from the announcement of the results.

4. Study Regulation

The duration of study leading to obtaining a Master's Degree is defined in three (3) academic semesters. Each specialization includes two semesters of attending courses and one semester of preparing the M.Sc. thesis. Each semester corresponds to 30 ECTS.

The language of teaching and writing of the master's thesis is Greek and/or English.

The first two semesters include the compulsory and elective courses of the respective specialization, which all students attending the specific specialization are required to successfully attend.

The Program starts in the winter semester of each academic year. Each semester of study includes at least thirteen (13) weeks of teaching and three (3) weeks of exams. All courses are taught weekly and, as the case may be, may include theoretical lectures, tutorials, laboratory exercises, seminars, assignments, practical training.

Attending the courses/workshops etc. is compulsory and absences of more than 20% of the teaching hours per course are not allowed.

The preparation of the M.Sc. thesis takes place in the third semester of studies and is credited with thirty (30) ECTS. The assignment of a M.Sc. thesis is made after attending all the courses of the study program and the examination in them. Thus, a total of 90 ECTS are required to obtain the M.Sc. Degree.

The Master's Thesis must be individual, original, have a research character and be written in accordance with the writing instructions posted on the Program website.

To gain approval, the student is required to defend its theses in front of three-membered examination committee. Should the examination committee approve the theses, it is obligatory for them to be archived within the University of Athens' Digital Repository "PERGAMOS."

A Professor Advisor is assigned to each student. The Advisor collaborates with the student, advises and supports them in matters of study, courses, options and perspectives, enhancing the student's academic goals. When the student begins the preparation of the M.Sc. thesis, the Advisor is replaced by the Supervisor of the thesis.

5. Student Evaluation

The evaluation of postgraduate students is carried out at the end of each semester with written or oral exams or with the preparation of assignments throughout the semester or based on intermediate progress exams , written assignments, laboratory exercises or apply a combination of all of the above. The evaluation method is defined by the teacher of each course. When conducting written or oral examinations, as evaluation methods, the integrity of the process must be ensured. Grading is done on a scale of 1-10.

Alternative methods may be applied for the evaluation of students with disabilities and special educational needs.

In case of failure in any course, the student has the right to repeat the exam two more times (three times in total) in the September exam or in the exam in which the course is taught.

If the student fails more than three (3) times in the same course, the procedure defined by the current legislation is followed.

To calculate the grade of the degree, the importance of each course as well as the thesis in the study program is taken into account and is expressed by the number of credits (ECTS). The number of credits (ECTS) of the course is also the weighting factor of this course. To calculate the grade of the degree, the grade of each course is multiplied by the corresponding number of credit units (of the course) and the total sum of the individual products is divided by the total number of credit units required to obtain the degree. This calculation is expressed by the following mathematical formula:

$$\text{Grade} = \frac{\sum_{k=1}^{N} \text{BM}_k \cdot \Pi\text{M}_k}{\Sigma\Pi\text{M}}$$

where:
N = number of courses required to obtain the corresponding degree
BM_k = grade of the course k
ΠM_k = credit units of the course k
$\Sigma\Pi M$ = 90, the total number of credits for obtaining the corresponding degree

For obtaining the Master's Degree every postgraduate student must attend and be successfully examined in all the compulsory and the required number of electives from the offered courses of the Program and to prepare a postgraduate thesis, thus accumulating ninety (90) ECTS.

6. Curriculum

Data Analytics for Humanities		
1st Semester		
Compulsory sourses	**Teaching Hours**	**ECTS**
Introduction to Digital Humanities	3	6
Data Analytics	3	6
Image Processing/Analysis	3	6
Databases in historical and archaeological research	3	6
Elective courses (1 of the following)		
Semantic Web	3	6
Human-Computer Interaction	3	6
Quantitative Methods for Textual Data	3	6
Mathematics for Humanities	3	6
Total	**15**	**30**
2nd Semester		
Compulsory sourses	**Teaching Hours**	**ECTS**
Data Analysis for Humanities with Python	3	6
Data Base Systems	3	6

Special Topics in Machine Learning	3	6
Elective courses (2 of the following)		
Text Mining	3	6
Computational Stylistics	3	6
Linguistic Annotation	3	6
Data Visualization	3	6
VR/AR Technologies	3	6
Total	**15**	**30**
3rd Semester		
Courses	**Teaching Hours**	**ECTS**
Msc Thesis		30
Total		**30**
TOTAL		**90**

3D Technologies		
1st Semester		
Compulsory sourses	**Teaching Hours**	**ECTS**
Introduction to Digital Humanities	3	6
Human-Computer Interaction	3	6
Image Processing/Analysis	3	6
Introduction to 3D Technologies	3	6
Elective courses (1 of the following)		
Data Analytics	3	6
Python Programming for Humanities	3	6
Introduction to GIS	3	6
Total	**15**	**30**
2nd Semester		
Compulsory sourses	**Teaching Hours**	**ECTS**
VR/AR Technologies	3	6
Advanced 3D	3	6
Elective courses (3 of the following)		
Data Base Systems	3	6
Special Topics in 3D	3	6
Data Analysis for Humanities with Python	3	6
Data Visualization	3	6
Advanced GIS (I): Geospatial Analysis and Modelling in GIS	3	6
Σύνολο	**15**	**30**
3rd Semester		
Courses	**Teaching Hours**	**ECTS**
MSc Thesis		30
Total		**30**
TOTAL		**90**

Augmented Textual Studies		
1st semester		
Compulsory courses	**Teaching Hours**	**ECTS**
Mathematics for Humanities	3	6
Python Programming for Humanities	3	6
Quantitative Methods for Textual Data	3	6
Introduction to AI and Machine Learning	3	6
Elective courses (1 of the following)		
Stemmatics and Textual Criticism	3	6
Human-Computer Interaction	3	6
Introduction to GIS	3	6
Total	**15**	**30**
2nd semester		
Compulsory courses	**Teaching Hours**	**ECTS**
Linguistic Annotation	3	6
Text Mining	3	6
Databases and Tools in Ancient Greek Philology	3	6
Elective courses (2 of the following)		
Data Base Systems	3	6
Computational Stylistics	3	6
Data Analysis for Humanities with Python	3	6
Data Visualization	3	6
VR/AR Technologies	3	6
Special Topics in Text Encoding	3	6
Σύνολο	**15**	**30**
Γ΄ εξάμηνο		
Μαθήματα	**Teaching Hours**	**ECTS**
MSc Thesis		30
Total		**30**
TOTAL		**90**

Geographic Information Systems		
1st semester		
Compulsory courses	**Teaching Hours**	**ECTS**
Introduction to Digital Humanities	3	6
Introduction to GIS	3	6
Spatial Analysis and Quantitative Geography	3	6
Elective courses (2 of the following)		
Image Processing/Analysis	3	6
Data Analytics	3	6
Human-Computer Interaction	3	6
Introduction to 3D Technologies	3	6
Mathematics for Humanities	3	6
Total	**15**	**30**
2nd semester		
Compulsory courses	**Teaching Hours**	**ECTS**
Advanced GIS (I): Geospatial Analysis and Modelling in GIS	3	6
Advanced GIS (II): Satellite Remote Sensing and Image Analysis	3	6
Elective courses (3 of the following)		
Advanced 3D	3	6
Special Topics in 3D	3	6
Data Analysis for Humanities with Python	3	6
VR/AR Technologies	3	6
Total	**15**	**30**
3rd semester		
Courses	**Teaching Hours**	**ECTS**
Msc Thesis		30
Total		**30**
TOTAL		**90**

7. Courses Description

	Introduction to Digital Humanities
Description	● Introduction to Digital Humanities. Key objectives, historical development. ● Definitions and issues in Humanities research. ● The contribution and utilization of computer science and digital technologies in the fields of Humanities research. ● Concepts, terms and presentation of Data analytics, 3D and GIS and their relationship with the Humanities. ● Challenges and problems of the Digital Humanities area.
Learning Outcomes	After the end of the courses the student will ● has understood what Digital Humanities is, its role and importance ● has an oversight of digital technologies applied to Humanities. ● understands key concepts and research streams of Digital Humanities. ● has familiarized himself with terminologies and concepts related to the digital technologies of the Study Program.

	Mathematics for Humanities
Description	● Set Theory and Elements of Mathematical Logic with references to their basic concepts (union, intersection, symmetric difference, etc.). Propositional, categorical calculus, inference and their simple applications in language game creation and sentence/text comparison. ● Mathematical Calculus (Functions), with references to the basic concepts of functions (graph, continuity, derivative, integral, etc.) with related exercises and examples. ● Linear Algebra (Vectors, Matrices, Linear Spaces), with examples of representation in space and simple applications of vectors and matrices to represent collections of text, compare text, and extract terms/non-important words. ● Probability and Statistics, with references to the basic concepts (random variables, bounded probability, discrete and continuous distributions, mean, variance, probability functions and Bayes

	approximation) and their simple applications in the description of texts/corpses of texts. ● Simple Python scripts to implement simple computational models of mathematical concepts.
Learning Outcomes	After the course the student will be able to ● understand and handle basic mathematical concepts and tools as a background for research in Digital Humanities.

	Python Programming for Humanities
Description	● Introduction to programming languages. ● The Python programming language; usage for text processing. ● Variables, strings, data input, control flow, lists, functions, tuples, sequences, files, output formatting, graphs.
Learning Outcomes	After the course the student will be able to ● to understand the paradigms of programming languages that exist, ● use the Python language to solve a problem.

	Quantitative Methods for Textual Data
Description	● Descriptive and inductive statistics: main concepts ● Statistical hypothesis testing ● Multivariate statistical analysis applied to linguistic data: Logistic Regression, Discriminant Analysis, Principal Component Analysis, etc. ● R programming language and its use in quantitative linguistic data analysis.

Learning Outcomes	After the course the student will be able to ● understand basic concepts of descriptive and inductive statistics, ● to apply experimental methods to the analysis of linguistic data, ● to use multivariate analysis methods in linguistic data, ● to utilize the R programming language for the quantitative analysis of linguistic data.

	Data Analytics
Description	• Data sources ○ Data categories (statistics, structured, unstructured, big data, etc.). • Collection, pre-processing and management of data in different formats, CSV, XML, JSON etc. • Data representation based on vector model - Text transformation. • Structured data management (arrays, vectors, databases, accessibility, data sharing, data governance, ethics and privacy). • Data analysis – Relevance and similarity -Elements of statistical analysis – Data quality • Presentation, visualization and exploitation of data • Functional utilization of data (from the end user's perspective) • Applications and examples of data collection, processing, presentation and analysis in the humanities.
Learning Outcomes	After the course the student will be able to ● Understand the concept of data and data analysis in the Humanities ● Represent and organize data ● Select appropriate models for their analysis ● Recognize patterns in the data and draw useful conclusions from their processing ● Manage large volumes of data ● Use effective methods of data utilization

	Data Analysis for Humanities with Python

Description	• Programming with Python
	• Programming with Python in the Humanities
	• Data Analysis Applications with the Python language:
	  ○ Thematic analysis of texts
	  ○ Linguistic analysis of texts
	  ○ Stylistic analysis of texts
	  ○ Image analysis algorithms
	  ○ Analysis of geographic data

Learning Outcomes	After the course the student will be able to • To develop applications based on the Python programming language to analyze textual, image and geographic data derived from datasets developed by Humanities researchers.

	Databases in historical and archeological research
Description	• Archival collections, Archives, data and metadata: concepts and definitions. • Cultural data documentation standards (e.g. CIDOC CRM) • Digital libraries of historical and archaeological research (e.g. Library of Parliament, ELIAS, Anemi, Gallica). • Audiovisual archives and their utilization in historical and archaeological research (e.g. ERT ASKII Digital Archive, Academy of Athens) • Software tools for organizing bibliographic and research data, Documentation tools (e.g. bibliographic data bases / Zotero, documentation bases / Heurist) • History-Archaeology and the Internet: The diffusion of "historical knowledge", myths, stereotypes, etc., digital public sphere (social media). • Case studies: The databases and repositories of the History and Archeology laboratories of NKUA and R.C. Athena. • National and European Repositories and European Infrastructures (RIs) for the Humanities (e.g. DARIAH)
Learning Outcomes	After the course the student will be able to • to know the main digital sources and tools for History and Archaeology. • to know and utilize databases, repositories and research infrastructures of historical and archaeological research.

	Linguistic Annotation
Description	• Advanced topics on Palaeography. • Descriptive logic of handwritten texts. • Classification and organization of handwritten information. • Transcription-oriented logic. • Annotation Levels and interconnection of the transcribed information. • Fundamentals of Lachmann, Stemmatics and Textual Criticism. • Annotation of transcriptions, morphology, syntax and semantics of handwritten (scientific and literary) texts. • Introduction to XML– DTD – XML Schema. • TEI, Epidoc. • Annotation of Handwritten Information and Typographical Information.
Learning Outcomes	After the course the student will be able to • to transcribe and compare manuscripts • to create critical editions of texts • organize and manipulate text corpora • annotate and encode texts utilizing existing standards and tools for encoding (morphological, syntactic, semantic)

	Image Processing/Analysis
Description	• Image digitization • Digital image capture devices • Image transformations • Image Registration • Image Segmentation • Image enhancement • Image coding, compression and transmission techniques • Image analysis, feature extraction, image categorization • Image restoration • Applications of image processing and analysis in the humanities: Optical Character Recognition in printed and handwritten texts, object recognition through image analysis, image reconstruction of objects.

Learning Outcomes	After the course the student will be able to ● Understand the basic concepts of digital imaging. ● To understand, apply and utilize image processing and analysis tools in the context of character and object recognition.

	Introduction to AI and Machine Learning
Description	● Knowledge representation (propositional logic, first-order logic, semantic networks, etc.). ● Inference mechanisms, knowledge bases. ● Machine learning problems as optimization problems ● Goals and applications of machine learning ● Machine learning algorithms for natural language processing ● Multi-criteria optimization approaches (common optimization) and dealing with overfitting (overfitting) ● Overview of basic supervised learning methods, regression and classification models ● Unsupervised learning models, clustering, matrix factorization and latent semantic indexing algorithms ● Deep learning neural network methodologies and architectures ● Examples and applications in the humanities.
Learning Outcomes	After the course the student will be able to ● To understand the basic methods of knowledge representation and inference ● Be able to formulate machine learning problems as optimization problems and be familiar with basic multicriteria optimization approaches for machine learning ● To apply in Python programming language basic machine learning algorithms in text processing and analysis.

	Special Topics in Machine Learning
Description	● Deep learning and Natural Language Processing (NLP) - training various types and architectures of neural networks. ● Language models, vector representations of words. ● Recursive neural networks. ● Models of long-term memory. ● Convolutional neural networks and models that include attention mechanisms ● Machine learning applications in image analysis and text annotation.
Learning Outcomes	After the course the student will be able to ● apply and use deep learning tools with neural networks to natural language processing, image analysis and text annotation problems ● understand various types of neural networks and their potential applications in deep learning architectures

	Text Mining
Description	• Main techniques for text mining and text analysis. • Supervised and unsupervised methods for knowledge extraction from texts. • Statistical approaches which can be generally applied to arbitrary textual data in any natural language.
Learning Outcomes	After the course the student will be able to • understand techniques for extracting knowledge from texts using machine learning techniques, • be familiar with clustering and text classification techniques, • use the corresponding Python and R libraries for textual data mining and analysis applications.

	Databases and Tools in Ancient Greek Philology
Description	• Introduction to the Databases of Ancient Greek Philology (TLG, L'Année philologique, Trismegistos, LDAB, CEDOPAL, APh, Arachne, BP3, papyri.info, DDbDP, APIS, HGV, Digital LOEB Classical Library, etc.). • Comparison with Databases of similar disciplines (e.g. Epigraphische Datenbank, Packhum, Sylloge Nummorum Graecorum) • Scientific use of the Databases of Ancient Greek Philology. • Embedding the use of Epidoc beyond the inscriptions: The case of the databases of Ancient Greek Philology and Papyrology. • Familiarization with SoSOL on the example of its implementation in the Papyrological Editor. • Use of Leiden+ in Databases of Ancient Greek Writing. • Electronic journals in the field of Ancient Greek Philology and its related scientific disciplines. • Electronic publications in XML, the example of Pylon and the Papyrological Publication Platform (P3). • Data extraction from databases of Ancient Greek Philology in the example of DDbDP beyond the interface accessible to all. • Data assertion into databases of Ancient Greek Philology and Papyrology in the example of DDbDP and Papyrological editor in Leiden+.
Learning Objectives	After the end of the course the student • will have knowledge of all the databases of Ancient Greek Philology and its related scientific branches, • will have gained experience in using and further familiarity with Epidoc, SoSoL, Leiden+. • will be able to extract data from the databases by doing searches beyond the interface accessible to all • will be able to assert data into databases of Ancient Greek Philology in collaboration with the managers of these databases having done an internship at papyri.info • will be able to actively handle electronic journals that publish in XML with the aim of facilitating data transfer between scientific electronic journals and specialized philological data repositories.

	Data Base Systems

Description	• Introduction to Database Management Systems - Types of Databases: Relational, Semi-structured, Script-centric.
	• Relational Databases:
	  ○ Conceptual Modeling (E-R Model).
	  ○ The Relational Model.
	  ○ Database scheme.
	  ○ Query Languages (SQL).
	• Information Retrieval Systems.
	• Digital Libraries.
	• Data Integration.

Learning Outcomes	After the course the student will be able to • understand the types of databases and their differences • design a relational database, insert data into it, design queries, etc., • adequately handle the basic concepts of Information Retrieval Systems

	Human-Computer Interaction
Description	• Human-machine communication and interactive systems design. • Modeling the human as a computer system user. Cognitive models, perception and representation, attention and memory, representation and organization of knowledge. • Conceptual models, user models, user group models, interaction models. • Interaction styles, methods and rules for designing interactive systems. • Usability • valuation of interactive systems. • Collaboration technologies and disability technology. Tactile Interaction. • Interaction in the World Wide Web Environment. • Interactivity in ubiquitous computing.
Learning Outcomes	After the course the student will be able to design and evaluate interactive systems.

	Data Visualization
Description	• Analysis, modeling and visualization of data and large volumes of data (big data), with the aim of effective communication and understanding by their users. • Characteristics of the visual perception. • Visualization methods (eg line/bar/pie/area charts & graphs, scatter/bubble/polar/funnel plots, treemaps, etc.) for the visual representation of different categories of data. • Interactive visualization techniques. • Visual presentation techniques: Dataflow, Pivot tables, Animate Shift of Focus, Overview & detail, Semantic Zoom, Magic lens, etc. • Data stories creation issues. • Evaluation of interactive visualizations.
Learning Outcomes	After the course the student will be able to • utilize tools for the analysis of real-life data sets. • create interactive visualizations.

	Introduction to GIS
Description	• Fundamentals of Geographic Information Systems (GIS) in Archeology and History. • Types of geographic information (vector and raster) • Property tables and types of geographic information • Basic concepts of geodetics, coordinate systems and transformations. • Cartographic projections, spatial data structures. • Digitization of spatial data sets. • Georeferencing images. • Spatial interference. • Cartographic composition.
Learning Outcomes	After the course the student will be able to • Utilize a geographic information system for applications in the Digital Humanities. • To create Maps of historical and archaeological data in combination with other geographical data. • Understand the different projection systems that will be useful in GPS mapping and georeferencing maps in a GIS environment.

	Advanced GIS (I): Geospatial Analysis and Modelling in GIS
Description	• Creation and editing of Digital Territory Models their derivatives. • Geospatial analyses, • Raster map creation. • Spatial and thematic queries. • Exploratory data analysis and geostatistical methods. • Visibility Analysis • Least Cost Analysis • Geomorphological analyses • Classification and thematic visualization • Density maps • Thiessen analyses • Risk assessment models
Learning Outcomes	After the course the student will be able to manage different heterogeneous geospatial information, to perform algebraic operations between raster maps, to do spatial analysis and to be able to create different forecast models of archaeological sites or risk models for the management and protection of archaeological resources.

	Advanced GIS (II): Satellite Remote Sensing and Image Analysis
Description	• Image interpretation • Sensor Analysis and satellite systems • Geometric and radiometric corrections • Radiometric enhancement • Spatial filtering • Pseudo-color compositions • Spectral signatures • Vegetation indicators • Classification analysis • Confusion tables and accuracy • Principal Component Analysis (PCA) • Change detection • Anomaly detection • Time series analysis • Interferometry

Learning Outcomes	After the course the student will be able to combine and apply various processing techniques, including classification processing, extract spectral signatures, analyze time series of satellite images, detect changes in a satellite image, and calculate vegetation indices through integration and synthesis with other existing geodata and online services.

	Introduction to 3D Technologies
Description	• Introduction to the new technologies of 3D representation (3D modeling) and their applications in the Humanities. • 3D modeling basics. • Elements of differential geometry and shape analysis. • Digital representation of shapes - 3D data structures. • Elements of a geometric modeling system. • Software for the creation of 3D models (Blender, Unity, etc.). • 3D digitization. • 3D printing. • Applications in the humanities dissemination of cultural heritage through digital media.
Learning Outcomes	After the end of the course the student will: • understand 3D representation technologies and their application advantages in the humanities • be familiar with 3D modeling, digitization and printing • know software for the creation of 3D models and applications used in the humanities

	Advanced 3D

Description	• Basics of Machine vision
	• 3D digitization technologies:
	  ○ 3D scanners and depth mapping systems
	  ○ Photogrammetry and applications
	  ○ Principles of digital photography
	  ○ 3D geometric representation through automated and semi-automated ground and aerial photogrammetry data collection
	  ○ Approaches using GPS and GIS.
	• Photogrammetry software
	• Advanced applications in the humanities:
	  ○ 3D digital copies of findings from archaeological excavations, monuments and remains from various historical periods.
	  ○ 3D models in the context of an archaeological and historical research
	  ○ Digital copies of exhibits and synthetic museum exhibitions.
	  ○ Development of 3D digital museums and exhibitions.

Learning Outcomes	After the end of the courses the student will • be familiar with machine vision components, 3D digitization technologies and Photogrammetry software • utilize these technologies in various fields of the humanities

	Special Topics in 3D
Description	• 3D analysis and data processing. • 3D digital reconstruction/restoration of objects/monuments with documentary sources and use of 3D digital copies of fragmentarily preserved documents.

	• Digital Representation of Reality (Reality Modeling):
	  ○ 3D digital landscapes - humanities educational tools and educational games.
	  ○ Reconstruction of a landscape of the past.
	• 3D printing:
	  ○ Printing of dummies used in training, research and demonstration.
	  ○ Prosthetic reconstruction of finds and monuments.

Learning Outcomes	After the end of the course the student • will understand elements of 3D data analysis and processing and deepen their application in 3D digital reconstruction / restoration. • will become familiar with the digital representation of reality and its application in the creation of 3D digital landscapes. • will deepen into the application of 3D printing in the humanities with an emphasis on model printing and prosthetic reconstruction.

	VR/AR Technologies
Description	• Modern techniques for highlighting exhibits and collections (digital storytelling, holograms, etc.). • VR/AR technologies for creative/artistic expression. • Copyright management and security issues.
Learning Outcomes	After the course the student will be able to develop virtual exhibitions of cultural content using virtual and augmented reality tools.

	Spatial Analysis and Quantitative Geography
Description	• Critical analysis of spatial data. • Modeling spatial interpolation trends and point distributions. • Regression models and cluster analysis. • Analysis of point patterns and detection of hot spots (hotspots). • Geographically Weighted Regression (GWR). • Applied statistics for space-time clustering.
Learning Outcomes	After the course the student will be able to • Use data science and machine learning algorithms and tools to analyze spatial data and understand the causes and effects of spatial phenomena. • Use programming languages such as R, or Python to retrieve, process, visualize and model geographic data • Apply cartographic and geographic theory concepts to map and model large geographic data • Conduct research using the data science and GIS methods taught in the course

	Semantic Web
Description	• Metadata. • Semantic Web and Ontologies. • Vocabularies and Thesauri. • Domain Ontologies. • Data Mappings and Transformation. • Linked Data. • Utilization of the above in text analysis.
Learning Outcomes	After the course the student will be able to • to understand the technological stack of the Semantic Web (URIs, XML, RDS/S, OWL, SPARQL, Linked Data), • design an Ontology and describe data based on it (Protégé, SKOS, triplestores), • transform existing data into RDF data.

	Stemmatics and Textual Criticism
Description	• "Textus receptus", Lachmann method and structured examination of "witnesses". • Text preserved in a single manuscript. • Text preserved in several manuscripts. • Codicology Basics. • Time, paternity and locality. • Stemmatics theory. • Error taxonomies. • Text Editing. • Special terminology. • Comparison of typescript and handwritten text production.
Learning Outcomes	After the course the student will be able to • understand fundamental principles of text restoration and editing, • utilize and use stemmatics principles for manuscripts, • distinguish the historical and contemporary techniques of text criticism.

	Computational Stylistics
Description	• Computational analysis of text style through natural language processing techniques. • Automatic author recognition, author profile recognition. • Ethical issues raised by such technologies as well as issues of authors' rights to anonymity.
Learning Outcomes	After the course the student will be able to • to describe the basic types of stylometry problems. • determine the appropriate linguistic features for solving specific authorship problems. • use appropriate machine learning methods to solve specific computational stylistics problems. • evaluate ethical parameters of using the above methodology.

	Special Topics in Text Encoding
Description	• Scripts of Antiquity, the Middle Ages and the Renaissance (Capitalis quadrata, Monumentalis, Uncialis, Rustica capitalis, Insularis maiuscula/minuscula, Visigothica minuscula, Carolingia minuscula, Protogothica, Gothica textualis, quadrata, rotunda, Humanistica). • Writing materials and techniques. • Process that precedes handwritten text production. • Strata of handwritten information. • Representation of text strata in space and time. • Association of script with "hand". • Palimpsests.
Learning Outcomes	After the course the student will be able to • to transcribe a handwritten text. • distinguish the strata of handwritten information. • to propose text restoration. • understand the concept of original hand-written texts in relation to script styles.

8. Tuition Fees

Postgraduate students pay tuition fees for their participation in the M.Sc. in Digital Humanities amounting to four thousand (4,000) in total, which will be distributed as follows: 1500 euros for each semester of teaching, per specialization, per student and 1000 euros for the semester in which the thesis is prepared.

9. Student's Service

Academic ID
All students of Higher Education Institutions in Greece are entitled to obtain the academic ID upon online application. The online platform for getting an academic ID is provided by the Ministry of Education, Lifelong Learning and Religions with the technical support of the National Research and Technology Network (GRNET) at https://academicid.minedu.gov.gr/. The academic ID card is a strong, flexible card with anti-fraud protection. In addition, it is designed to be valid for as long as the student maintains the student status (namely 12 months). Students can collect their ID cards at designated delivery points; each student can select the delivery point which is more convenient to him/her during the submission of his/her application, without any financial burden. The academic ID card is also distributed as a digital copy by downloading a PKPASS file for Android and Apple.

Academic ID card holders are entitled to discount fare products provided by the public transport organization OASA SA. To use their entitlement, students must issue a personalized ATH.ENA CARD by applying online through OASA's platform at https://www.oasa.gr/en/tickets/products/ath-ena-card/ .

Academic email
In order to access the infrastructure and services of the University of Athens, you must have a user account. In order to become a user you must apply for the creation of your Electronic Institutional Account. The secretariat will guide you through the process.

E-Class
E-class (https://eclass.uoa.gr/) is an integrated electronic course management system and supports the asynchronous distance learning service at the University of Athens. The service is accessed using the academic credentials that the student activates upon registration for an academic email. The integration of supportive e-learning methods in the learning process at the University of Athens supports and enhances teaching and access to knowledge, providing combinations of new methods to complement traditional teaching. In this way, learners choose their own time frame for communication and access to educational content. Furthermore, it supports the digital organization and distribution of the courses' educational material, as well as a multitude of means of communication between the teacher and the students, ensuring the smooth and uninterrupted conduct of the course.

Library of the School of Philosophy
Following the decision of the Rector's Council in 2005, the Library of the School of Philosophy was created under the coordination of which until recently (30/9/2018) 16 libraries operated. The brand-new building of the Library of the School of Philosophy was put into use in October 2018. 16 smaller libraries were relocated into a modern space of 7.500 m2 next to the School of Philosophy, with a joined-up catalog of their material, and in January 2019 was opened to the public.

Modern Greek Language Teaching Center
The Modern Greek Language Teaching Center of the National and Kapodistrian University of Athens has been functioning since the 1950s and nowadays it is the largest of its kind in the world. It constitutes an independent academic unit of the National and Kapodistrian University of Athens with the aim of teaching, promoting, strengthening, and disseminating the new Greek language as a second / foreign language, certifying its level of knowledge and Greek culture, the development of all kinds of actions and collaborations in the context of achieving its goals and the internship of the students of the study programs of NKUA, related to the subject module of Center's actions. For achieving its goals, it is in direct and continuous collaboration with the School of Philosophy of the National and Kapodistrian University of Athens.
For more information: https://en.greekcourses.uoa.gr/

E-Mail: info@greekcourses.uoa.gr

Restaurant of the School of Philosophy
The restaurant at the School of Philosophy serves students attending classes on campus. Foreign MA students may enjoy discount meals (3,00 euros per day). The opening hours of the restaurants are: daily from 12:00 to 16:00 and from 18:00 to 21:00. The opening hours of the restaurants during weekends are from 13:00 to 20:00. The menu includes the appetizer and two options for the main course. The meal plan (lunch-dinner) is posted in the restaurants at the beginning of each week. The company that undertakes the operation of the restaurants complies with both the European standards and the operating conditions set by the University. The University appoints regular or extraordinary audit committees, at regular intervals, to determine the cleanliness, quantity and quality of the portions, etc. The audits carried out by the University are independent of the audits carried out by the competent state services (Market Law, Health Service, etc.). In order to further ensure the quality of the services provided, there is also specialized staff that performs similar checks on a daily basis.

Accessibility Unit for Students with Special Needs
The mission of the Accessibility Unit for Students with Disabilities is to actively provide coequal access to academic studies for students with different abilities and needs, through environmental modifications, Assistive Technologies and access services. The basic requirements of the students with special needs include: access to interpersonal communication with the members of the academic community, access to the built environment of the university, access to the printed or electronic educational material, access to the board and the presentations in the classrooms, access to the exams/tests, and access to the information and online content.
The accessibility unit for students with special needs provides:

- Recording Service for the needs of the disabled.
- Department of Electronic Accessibility.
- Department of Accessibility in Structured Space.
- Delivery Service.

The main service of the Unit is the daily transfer of students from their homes to the study areas and vice versa. It has a specially designed vehicle that can transport five students at the same time, two of whom are provided with a wheelchair. The service operates continuously on working days from 07:00 to 22:00 with two shifts of drivers.
For more information: https://access.uoa.gr/en/home-2/