

NATIONAL AND KAPODISTRIAN
UNIVERSITY OF ATHENS



**Students' Guide to the
Postgraduate Programme**

MSc in ARCHAEOLOGICAL SCIENCE

Academic Year

2024-2025

This guide was edited by

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Information/Contact

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1. Subject, Purpose, Learning Outcomes and Regulations of Study

The MSc in Archaeological Science is organized and operated in cooperation by two different departments of the UoA: (a) the Department of History and Archaeology, and (2) the Department of Geology and Geoenvironment. The administrative support for the operation of the Programme is provided by the Department of History and Archaeology of the UoA. It was established in 2021 (Government Gazette 3731/B/12.8.2021), and started operating during the academic year 2024-2025.

Subject of this course is the application of Geosciences in Archaeology in order to achieve interdisciplinary research and the combined study of geological and archaeological data, aiming at understanding natural and human processes and answering archaeological questions raised by the study of the environment and the material culture of the past. It develops interdisciplinary research and the combined study of archaeology on the one hand and geology and the geosciences more broadly on the other, with the aim of education and research on the study and reconstruction of the human past.

Upon completion of the programme, students will be able to:

- Search, analyse and synthesise data and information, using the necessary technologies.
- Carry out independent work.
- Develop creative and deductive thinking.
- make decisions.
- Participate in teamwork and in an interdisciplinary/international environment.
- Apply their knowledge to problem solving and turn theory into practice.
- Adapt to new situations.
- Generate new research ideas.

The MSc starts in the winter semester of each academic year. A total of 90 credits (ECTS) are required for the award of the Diploma of Postgraduate Studies. The courses are organized in 13-week semesters, each of which is held on a weekly basis and are conducted in English. Students attend four compulsory seminars in the winter semester and three compulsory seminars in the spring semester. Attendance of the courses is compulsory. In the third semester, the Master's Thesis is written in English or, upon the student's request and approval by the Programme Committee, in Greek.

In order for the thesis to be approved, the student has to defend it before the examination committee. The Master's Theses, if approved by the examination committee, must be posted in the Digital Repository "PERGAMOS" of the University of Athens.

Detailed information on the structure, courses and application procedure is presented on the Programme website: <https://archaeoscience.arch.uoa.gr/>

2. Directing Committee

Director

Yiannis Papadatos, Professor, Department of History and Archaeology, NKUA

Members

John Alexopoulos, Associate Professor, Department of Geology and Geoenvironment, NKUA

Katerina Kouli, Associate Professor, Department of Geology and Geoenvironment, NKUA

Platon Petridis, Professor, Department of History and Archaeology, NKUA

Panagiotis Pomonis, Professor, Department of Geology and Geoenvironment, NKUA

3. List of courses

Course Title	Moderator	Semester	Type of Course	Teaching hours (week)	ECTS
Archaeology, History and the Environment of the Mediterranean	Yiannis Papadatos Katerina Kouli	Winter	Compulsory	3	6
Archaeology and Science	Yiannis Papadatos Panagiotis Pomonis Katerina Kouli	Winter	Compulsory	3	6
Laboratory and Instrumental skills	Panagiotis Pomonis Athanasios Godelitsas	Winter	Compulsory	3	9
Archaeological Prospection	John Alexopoulos Nikolaos Voulgaris	Winter	Compulsory	3	9
Environmental Archaeology	Katerina Kouli	Spring	Compulsory	6	12
Geoarchaeology	Panagiotis Karkanas Yiannis Papadatos	Spring	Compulsory	3	6
Archaeomaterials	Panagiotis Pomonis Yiannis Papadatos	Spring	Compulsory	6	12

4. Teaching staff

For more details and CVs you may visit the webpage of the MSc programme:

https://archaeoscience.arch.uoa.gr/academic_staff

Name	Title	Specialisation	Module
ALEXOPOULOS Ioannis	Associate Professor Dept of Geology & Geonvironment	Applied, Technical and Environmental Geophysics Archaeological Prospection	AS1004 Archaeological Prospection
BALITSARI Anthi	Postdoc Researcher Dept of History & Archaeology	Prehistoric Archaeology Ceramic technology of the Prehistoric Aegean	AS1007 Archaeomaterials
DRANDAKI Anastasia	Associate Professor Dept of History & Archaeology	Byzantine archaeology Late Antiquity and Byzantine metallurgy	AS1001 Archaeology, History & the Environment of the Mediterranean AS1007 Archaeomaterials
GODELITSAS Athanasios	Professor Dept of Geology & Geonvironment	Mineralogy-Mineral Chemistry Petrographic, mineralogical and chemical analyses of archaeological materials	AS1003 Laboratory and instrumental skills
GOUMA Myrsini	Researcher Wiener Laboratory American School of Classical Studies	Geoarchaeology Soil Micromorphology	AS1006 Geoarchaeology
KARKANAS Panagiotis	Director Wiener Laboratory American School of Classical Studies	Geoarchaeology Soil Micromorphology	AS1006 Geoarchaeology
KEFALIDOU Euridice	Associate Professor Dept of History & Archaeology	Classical Archaeology Ceramic technology and iconography of the Archaic and Classical Periods	AS1001 Archaeology, History & the Environment of the Mediterranean AS1007 Archaeomaterials
KOULI Katerina	Associate Professor Dept of Geology & Geonvironment	Palaeontology-Palaeobotany- Geoarchaeology Environmental Archaeology	AS1001 Archaeology, History & the Environment of the Mediterranean AS1002 Archaeology and Science AS1005 Environmental Archaeology
LYRAS Georgios	Associate Professor Dept of Geology & Geonvironment	Vertebrae Paleontology Zooarchaeology	AS1005 Environmental Archaeology
MEGREMI Ifigeneia	Teaching Staff Dept of Geology & Geonvironment	Environmental Mineralogy	AS1001 Archaeology, History & the Environment of the Mediterranean

MICHAILIDIS Dimitrios	Researcher Wiener Laboratory American School of Classical Studies	Vertebrate Palaeontology Zooarchaeology	AS1005 Environmental Archaeology
PAPADATOS Yiannis	Professor Dept of History & Archaeology	Prehistoric Archaeology Technology and Arts of the Prehistoric Aegean	AS1001 Archaeology, History & the Environment of the Mediterranean AS1002 Archaeology and Science AS1007 Archaeomaterials
PETRAKIS Vassilis	Assistant Professor Dept of History & Archaeology	Prehistoric Archaeology Technology and Arts of Mycenaean Greece	AS1001 Archaeology, History & the Environment of the Mediterranean AS1007 Archaeomaterials
PETRIDIS Platon	Professor Dept of History & Archaeology	Byzantine Archaeology Ceramic technology of the Byzantine period	AS1001 Archaeology, History & the Environment of the Mediterranean AS1007 Archaeomaterials
POMONIS Panagiotis	Professor Dept of Geology & Geonvironment	Petrology of igneous rocks Petrographic, mineralogical and chemical analyses of archaeological materials	AS1002 Archaeology and Science AS1003 Laboratory and instrumental skills AS1007 Archaeomaterials
ROGGENBUCKE Michel	Teaching Staff Dept of History & Archaeology	Conservation of Antiquities Ancient metallurgy	AS1007 Archaeomaterials
ROUSSIAKIS Sokratis	Associate Professor Dept of Geology & Geonvironment	Vertebrae Paleontology Zooarchaeology	AS1005 Environmental Archaeology
STATHOPOULOU Elisabeth	Teaching Staff Dept of Geology & Geonvironment	Paleontology-Archaeometry	AS1005 Environmental Archaeology
VASSILAKIS Emmanouil	Associate Professor Dept of Geology & Geonvironment	Remote Sensing & Geomorphology Archaeological Prosepction	AS1004 Archaeological Prosepction
VORRIS Efstathios	Teaching Staff Dept of Geology & Geonvironment	Petrology-Mineralogy Petrographic, mineralogical and chemical analyses of archaeological materials	AS1003 Laboratory and instrumental skills AS1007 Archaeomaterials
VOULGARIS Nikolaos	Emeritus Professor Dept of Geology & Geonvironment	Seismology, Applied Geophysics Archaeological Prosepction	AS1004 Archaeological Prosepction

5. Courses of Academic year 2024-2025

Archaeology, History and the Environment of the Mediterranean

Semester: Winter

Moderators: Prof. Yiannis Papadatos, Associate Professor Katerina Kouli

The aim of the course is to introduce students to the methods and research questions of archaeology, as well as the basic principles of the earth sciences that collaborate with archaeology. This knowledge is absolutely necessary in order for students to fill the gaps in their knowledge in these sciences, so that they can continue their studies in this MSc. The course consists of two major units. The first relates to the geological processes of the Quaternary, and includes issues of dating, palaeoenvironmental reconstruction, ecology, and the relationship between humans and the environment. The second relates to the archaeology of the Mediterranean from prehistory to the modern period, with an emphasis on the key questions raised by the study of ancient material remains.

Archaeology and Science

Semester: Winter

Moderators: Prof. Yiannis Papadatos, Professor Panagiotis Pomonis, Associate Professor Katerina Kouli

This course presents the basic principles, theoretical background and methods of approach applied to the analysis of the paleoenvironment and material culture of the past. The course includes two major sections. The first is related to environmental studies and deals with the reconstruction of the palaeoenvironment through the study of archaeobotanical, zooarchaeological and other biomarkers. Earlier methods of approaching these issues are critically examined and the concept of the anthropogenic landscape is introduced as a result of the ongoing two-way relationship between humans and the natural environment in the past. The study of the palimpsest landscape contributes to a better understanding of how humans perceive the world and interact with it over time. The second module relates to archaeological materials and deals with issues of technology and material culture, such as the exploitation of raw materials, the entrepreneurial production chain, the life cycle and the consumption of material culture objects, with an emphasis on objects made of clay, metal, stone and glass. Both sections examine the research questions posed by archaeologists, and the contribution of the natural sciences to addressing these questions.

Finally, this course introduces the concept of the research tool of the Historical Landscape in the approach of space as a cultural palimpsest, aiming at a fuller understanding of the relationships between the various spatial, temporal, ecological and cognitive contexts in which people interact creatively with their environments and use the available resources.

Laboratory and Instrumental skills

Semester: Winter

Moderators: Professor Panagiotis Pomonis, Professor Athanasios Godelitsas

This course aims to provide students with the basic knowledge and skills for the use of laboratory equipment in archaeological research projects. The basic principles of the main analytical techniques used in archaeological research are presented, and the potential, limitations and best practice protocols are discussed. The course includes classroom lectures and practical applications in the laboratories. The analytical techniques and equipment presented relate to methods for the analysis of archaeological materials (from clay, metal, stone and glassy materials) and ecofacts (plant and animal remains, soil). The methods presented are divided into the following major sections: spectrometry-spectroscopy, optical microscopy, solids analysis, and statistical methods for the management of analytical results.

Archaeological Prospection

Semester: Winter

Moderators: Associate Professor John Alexopoulos, Emeritus Professor Nikolaos Voulgaris

The course provides theoretical and practical knowledge of the methods and techniques of applied geophysics and remote sensing aimed at the detailed mapping of the surface and subsurface environment. The physical parameters of the geomaterials, the geophysical equipment used, data processing, limitations and capabilities of the methodologies are presented. It includes a discussion of sophisticated data processing and results visualization techniques in archaeological projects, how they can answer the archaeological questions posed, their importance in identifying sites in a non-destructive manner, and their role in the pre-excavation phases of an archaeological project. The ability of remote sensing techniques (resolution, digital processing, etc.), positioning systems and 3D laser scanning (lidar technique) to provide information in archaeological research is also presented. The course includes theoretical teaching in the lecture theatre and practical training in the laboratory and in the field.

Environmental Archaeology

Semester: Spring

Moderators: Associate Professor Katerina Kouli

This course consists of two major units: archaeobotany and zooarchaeology. In the Archaeobotany module, students learn on a theoretical and practical level the methods of approaching plant remains, and more specifically the sampling, identification, quantitative analysis and description of archaeobotanical remains, such as seeds, wood (carbonized or not), pollen and phytoliths. Particular emphasis is also placed on how archaeobotanical remains provide information on the diet, availability and use of plant raw materials and the vegetation landscape in the past. In the second section, zooarchaeology, the focus is on the study of animal remains, mainly bones. The course includes theoretical knowledge and practical exercises in the sorting, identification, quantitative analysis and description of zooarchaeological remains. The main objective of the second module is the information that can be extracted concerning human behaviour in the past and the relationship between man and his environment. Both modules of the course include an equal number of hours of classroom and laboratory teaching and practical training.

Geoarchaeology

Semester: Spring

Moderators: Professor Yiannis Papadatos, Dr. Panagiotis Karkanias

This course aims at the study and analysis of the geology, soils and stratigraphy of the deposits in order to extract information on the human presence, occupation and activity in an archaeological site or a wider area. It presents the main theories, ideas and research questions of concern to the discipline of geoarchaeology. It examines how geoarchaeological methods are applied to approach and answer archaeological questions, both theoretically and practically. Methods of approach are presented both at the small scale of an excavation section or archaeological site, and at the larger scale of an entire region. On a practical level, particular emphasis is placed on the science of micromorphology, and the methods by which research is carried out in the field and in the laboratory. The course includes an equal number of hours of classroom and laboratory teaching and practical training.

Archaeomaterials

Semester: Spring

Moderators: Professor Panagiotis Pomonis, Professor Yiannis Papadatos

This course is concerned with the study and analysis of archaeological materials and is divided into two major sections. The first section is concerned with the study and analysis of archaeological objects made of metal and glassy materials, and the second is concerned with objects made of clay and stone. Both sections present the raw materials, their physico-chemical properties and their existence in the Mediterranean environment, especially in the eastern Mediterranean. The technology of making objects from these materials in the past is also examined, as well as the archaeological remains associated with the operational chain of their production. The main methods of analysis of the objects and the by-products of the processing of these archaeological materials are presented, and practical exercises are carried out using the relevant equipment in the laboratory. Particular emphasis is placed on the archaeological questions associated with the study of objects made from these archaeological materials, and the way in which analytical techniques contribute to the understanding of parameters related to the life cycle of these objects, from their manufacture and handling to their use and disposal. Both modules of the course include an equal number of hours of classroom and laboratory teaching and practical training.