



SECOND-LEVEL POSTGRADUATE MASTER'S PROGRAMME IN GEOTECHNOLOGIES FOR ARCHAEOLOGY (GTARC)

A.Y. 2026/2027

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|--|----------------------------|
| Total duration | 12 months |
| Teaching period | January 2027 - July 2027 |
| Internship period | August 2027 - January 2028 |
| Total teaching hours (Lectures, Practical Sessions and Laboratories) | 408 |
| Total Internship hours | 300 |
| Total credits (CFU/ECTS) | 65 |

Awarding Institution

University of Siena - Via Banchi di Sotto 55 - 53100 Siena (Italy)
Department of Historical Sciences and Cultural Heritage

Programme Type

Second-Level Postgraduate Master's Programme

Aims and Objectives

The **GTARC Postgraduate Master's Programme** aims to train professionals capable of integrating humanities and technological disciplines through the application of innovative methodologies for the investigation and interpretation of archaeological contexts.

Following the amendment of the Italian Cultural Heritage and Landscape Code (Legislative Decree no. 42/2004) and the national regulations governing professional archaeology, the programme places particular emphasis on the main legal aspects related to **preventive archaeology**, with a focus on the use of GIS for **archaeological risk** management. From this edition onwards, the curriculum is further enhanced by the introduction of artificial intelligence and machine learning techniques applied to geospatial data.

Graduates of the programme will develop advanced expertise in remote sensing, aerial photograph interpretation and archaeological field survey. They will acquire the skills required to identify and interpret traces of past human activities through non-invasive investigation methods, contextualise archaeological evidence within the landscape, produce thematic maps for the management and interpretation of archaeological data, develop and manage GIS databases supporting archaeological planning and territorial management, and communicate archaeological information through three-dimensional modelling and visualisation.

The programme covers the three main stages of archaeological research:

- archaeological prospection
- interpretation and analysis of archaeological evidence
- organisation, management and dissemination of archaeological data.

Schedule and Duration

January 2027 - January 2028; 708 hours (lectures + practical sessions + laboratories + internship)



Tuition Fees

Master's tuition fee: **€ 3,800**

The amount is payable in two instalments: the first instalment of € 2,000 (+ € 16 for the electronic stamp duty electronic stamp duty required under Italian law) payable upon enrolment; the second instalment of € 1,800 payable no later than 28 February 2027.

Language of instruction

Italian. A good command of the Italian language is therefore required.

Venue of the Master's Programme

Teaching is delivered in blended mode, combining face-to-face instruction with synchronous online learning. All classes are held at the Centre of GeoTechnologies (CGT), University of Siena (Via Vetri Vecchi 34, 52027 San Giovanni Valdarno - AR, Italy). Most lectures are also available through synchronous online delivery.

Recognition of Prior Learning (ECTS/CFU)

Admitted applicants may be granted recognition of previously acquired academic credits (up to a maximum of 25% of the total CFU/ECTS) for prior university-level learning in subject areas relevant to the programme, provided that such learning is appropriately documented. The Teaching Board reserves the right to assess the applicant's prior knowledge and competencies and may require an oral interview or a written assessment where deemed necessary.

Entry Requirements

To enrol in the Second-Level Postgraduate Master's Programme in Geotechnologies for Archaeology (GTARC) is required a second-cycle degree:

- any Italian degree awarded under the regulations prior to d.m. 509/99
- any Italian master's degree under d.m. 509/99 and under d.m. 270/2004

Applicants holding an academic qualification awarded abroad may also enrol, provided that, for enrolment purposes only, the qualification is deemed comparable in terms of level, nature, content and academic rights to the Italian qualification required for admission to the Master's Programme.

Contact Information

TEACHING SECRETARIAT:

Training Activities Coordination Office - e-mail master.cgt@unisi.it - Tel. +39 055.9119449

ACADEMIC CONTACT:

Prof. Giovanna Pizziolo - e-mail giovanna.pizziolo@unisi.it - Tel. +39 0577. 234871

ACCOMMODATION:

CGT Residence - e-mail collegiocgt@unisi.it - Tel. +39 055.9119457



Programme Structure

| Disciplinary Area | Learning Activities | Hours | ECTS |
|---|--|------------|-------------|
| RESEARCH METHODS IN ARCHAEOLOGY AND GEOLOGY | | 64 | 8 |
| | Geology and geomorphology | 24 | 3 |
| | Data acquisition in archaeology | 16 | 2 |
| | Data management in archaeology | 16 | 2 |
| | Preventive Archaeology | 8 | 1 |
| GIS AND CARTOGRAPHY FOR ARCHAEOLOGY | | 100 | 12,5 |
| | GPS | 4 | 1 |
| | Fundamentals of GIS | 24 | 3 |
| | GIS Applications | 16 | 2 |
| | Geoprocessing and geospatial AI | 20 | 2,5 |
| | GIS open source | 24 | 3 |
| | GIS Applications to preventive archaeology | 16 | 2 |
| 3D MODELING AND ARCHEOSEISMOLOGY | | 64 | 8 |
| | Fundamentals of CAD | 24 | 3 |
| | Archaeological 3D modelling | 24 | 3 |
| | Survey and archaeoseismology of structures | 16 | 2 |
| REMOTE SENSING FOR ARCHAEOLOGY | | 56 | 7 |
| | Fundamentals of remote sensing | 16 | 2 |
| | Practical of remote sensing | 16 | 2 |
| | AI and remote sensing | 8 | 1 |
| | Applications of remote sensing in archaeology | 8 | 1 |
| | Remote sensing exercises applied to archaeological contexts | 8 | 1 |
| PHOTOGRAMMETRY AND ADVANCED SURVEYING TECHNIQUES | | 80 | 10 |
| | Aerial and satellite photogrammetry | 40 | 5 |
| | Theoretical and methodological aspects of oblique aerial photography | 8 | 1 |
| | Aerial and terrestrial LiDAR | 32 | 4 |
| LANDSCAPE ARCHAEOLOGY AND FIELD SURVEY | | 44 | 5,5 |
| | Landscape archaeology | 24 | 3 |
| | Geophysics for archaeology | 12 | 1,5 |
| | Tools and techniques for archaeological contexts | 8 | 1 |
| CURRICULAR INTERNSHIP | | 300 | 12 |
| | Curricular internship | 300 | 12 |
| FINAL ASSESSMENT | | | 2 |
| | Final Dissertation | | 2 |