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Reframing Heritage Education in Egypt (ReHeED)

Work package 1: Surveys of Heritage Education and Gap Analysis

“Report on desk-based research on undergraduate & postgraduate programs of Heritage Education in Greek universities”

By the team representing the Democritus University of Thrace, Department of Architectural Engineering, Laboratory of Architectural Design and Research III: Theory of Forms and Preservation Studies.

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1. Short description of the Greek National education system.

1.1 Overall structure.

The national education system in Greece is divided into three major stages:

- 1) Primary education includes pre-primary and primary schools. *Nipiagogeio* (pre-primary school) in Greece has become compulsory for all 4-year-old children, since 2018/19. *Dimotiko scholeio* (primary school) spans 6 years. It concerns children in the age range of 6-12 years.
- 2) Secondary education includes two cycles of study:
 - The first one is compulsory and corresponds to *Gymnasio* (lower secondary school). This cycle lasts for 3 years, provides general education and concerns pupils in the age of 12-15. It is a prerequisite for enrolling at General or Vocational upper secondary schools (*Lykeio*).
 - The second one is the optional *Geniko* or *Epangelmatiko Lykeio* (General or Vocational Upper Secondary school). This stage of education also lasts for 3 years and pupils enrol at the age of 15. There are two different types:
 - a) *Geniko* (general) *Lykeio*. It lasts 3 years and includes both common core subjects and optional subjects of specialization.
 - b) *Epangelmatiko* (vocational) *Lykeio*. It offers two cycles of studies:
The secondary cycle and the optional post-secondary cycle, the so-called “apprenticeship class”.
There are also Evening Schools (for each type of *Lykeio*) that facilitate access to education for adults who are working or wish to complete their education.

However, in the context of this report, the main concern is the Tertiary or Higher education. According to the Framework Law (2007), higher education in Greece consists of two parallel sectors: the University sector (Universities, Polytechnic Schools, Fine art Schools and Open University) and the Technological sector (Technological Education Institutions and the School of Pedagogic and Technological Education). The same Law regulates issues concerning the governance of higher education along the general lines of increased participation, greater transparency, accountability and increased autonomy.

There are also State Non-University Tertiary Institutions offering vocationally oriented courses of shorter duration (2 to 3 years). It should also be noted that Technological Education Institutions have been merged with Higher Education Institutes.

1.2 Access to Higher Education.

Admission to the various Schools of the Universities and Technological Education Institutions depends on the general score obtained by Lyceum graduates on the Certificate, on the number of available spots and the candidates’ ranked preferences among schools and sections.

The Lyceum graduates who wish to continue their studies in higher education participate in Panhellenic Exams, which are organized by the Ministry of Education and take place at the end of every school year, between May and June. The examination topics are common to all students and are distributed by the Ministry to all schools. The results of the exams are announced on the same date for all students, both online and through their high schools. After the announcement of the results, the students who have passed, fill out a form stating their preference for the universities and schools that they wish to be admitted in. The results of the final admission to higher education are usually announced in August.

There is also a special provision for students with educational difficulties and the possibility for Greek students who leave in EU countries to participate as well.

1.3 Qualifications.

Students who complete their studies in Universities or Technological Education Institutions are awarded a *Ptychio* (first cycle degree). First cycle programmes last from four years for most fields to five years for Engineering and certain other applied science fields and six years for Medicine. The *Ptychio* leads either to employment or further study at postgraduate level leading to the second degree, *Metaptychiako Dimpoma Eidikefsis* – equivalent to the Master's degree – and the third cycle leading to the doctorate, *Didactoriko Diploma* (PhD).

Recent legislation on quality assurance in Higher Education, the Credit Transfer System and the Diploma Supplement defines the framework and criteria for evaluation of university departments and certification of student degrees. These measures aim at promoting student mobility and contributing to the creation of a European Higher Education Area.

More information on the Greek Education System is offered in EURYDICE database of the European Education Systems.

https://eacea.ec.europa.eu/national-policies/eurydice/content/greece_en

2. Undergraduate Studies on Heritage.

2.1 Democritus University of Thrace (DUTH), Department of Architectural Engineering (Arch DUTH).

The Department of Architectural Engineering was established in 1999 and started its operation in the academic year 1999-2000. Undergraduate studies last five (5) years and are divided into ten (10) academic semesters of full-time attendance. They correspond to 300 ECTS credits and are equivalent to a Master's degree.

The basic objective of this Department is the promotion of Architecture and Urban Studies not only as sciences but also as the basic parameters of Art and Culture. Moreover, the Department aims to train young engineers, using systematic and rational methods, in the study and research of any subject, whether common or specialized, which relates to the architectural conception, design, construction and management of the built environment from both a scientific and artistic point of view, while promoting at the same time the protection and preservation of cultural and artistic traditions.

The academic year begins on September 1st of each year and ends on August 31st of the following year. The educational period of each academic year is divided into 2 semesters, the Fall Semester, and the Spring Semester, each of them including 13 weeks of teaching and 3 weeks of exams.

Curriculum courses are divided into 9 academic semesters. The curriculum is common to all students, except for elective courses. The department offers in total 61 courses, out of which 44 are mandatory and 17 are elective. The minimum number of courses required for diploma acquisition is 50 (44 mandatory and 6 elective).

2.1.1 The Syllabus and Curriculum of Arch DUTH on Heritage Education.

The overall Curriculum of the Department of Architectural Engineering includes 61 courses, of which the ones related to Heritage Education are presented in the table below as follows:

No	Course Type	Course Title	ECTS credits	Hours /week
1st Semester				
1	Mandatory	HISTORY OF ARCHITECTURE AND ART I	3	4
2nd Semester				
2	Mandatory	HISTORY OF ARCHITECTURE AND ART II	3	4
3rd Semester				
3	Mandatory	HISTORY OF ARCHITECTURE AND ART III	3	4
4	Mandatory	THEORY OF FORM I – DOCUMENTATION, ANALYSIS AND PRESERVATION OF BUILDINGS AND MONUMENTS	3	4
4th Semester				
5	Mandatory	HISTORY OF ARCHITECTURE AND ART IV	3	4
6	Mandatory	THEORY OF FORM II – DOCUMENTATION, ANALYSIS AND PRESERVATION OF HISTORIC SITES	3	4
5th Semester				
7	Elective	THEORY OF FORM III – MORPHOLOGICAL ANALYSIS AND REINTEGRATION OF CONTEMPORARY BUILDINGS IN HISTORIC SITES	3	4
7th Semester				
8	Mandatory	RESTORATION, REDESIGN AND REVIVAL OF HISTORIC BUILDINGS AND SITES I	3	4
8th Semester				
9	Mandatory	THEORY OF FORM IV–MORPHOLOGICAL ANALYSIS, REINTEGRATION AND REHABILITATION OF MONUMENTS AND ARCHAEOLOGICAL SITES IN URBAN AND NON-URBAN AREAS	3	4
10	Elective	RESTORATION, REDESIGN AND REVIVAL OF HISTORIC BUILDINGS AND SITES II	3	4

In the following tables, one may find the Syllabus of each course.

No	Course Title	Institution-School Department	Semester, Hours/week	Course Type
4	"Theory of Form I: Documentation , Analysis and Preservation of Buildings and Monuments"	Democritus University of Thrace, School of Architectural Engineering	3rd semester of studies, 2nd year Winter semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	<p>There are two <u>main objectives</u> to be achieved via the courses in the context of Theory of Form educational cycle.</p> <p>a) The first aim is to focus on the concept of architectural composition by analysing the way people have approached it over time and the creative solutions they have proposed. In the course of "Theory of Form I", the basic aim is to examine the design process starting from the final product, which is the building itself, to reveal the initial design parameters.</p> <p>b) The second aim of the course is for students to objectively understand the current state of architecture through knowledge of its formation in the past.</p> <p>c)</p> <p><u>Course Subject:</u></p> <p>The subject of this course is the documentation, morphological and typological analysis of architectural buildings/monuments that are located in a historical settlement. For this course, the historic settlement under examination is the Old Town of Xanthi.</p>			
Teaching methodologies	<p>Language: Greek, English in cases of Erasmus students</p> <p>The teaching methodology includes both lectures and practical application of topics, in which students elaborate issues related to the analysis of buildings/monuments, methods and techniques of documentation, the exploration of forms and several types of construction, as well as the analysis of morphology and typology concepts.</p> <p>The basic project, conducted by the students, consists of the architectural documentation of a historic building/ monument located in the Old Town of Xanthi. Students collaborate and form groups of 3-4 persons. Also, the building is different for every student group. Every week the course starts with a lecture and continues with tutorial sessions, during which the tutors oversee the progress of the students.</p> <p>Moreover, the groups are asked to present their overall progress at defined intervals, in the presence of all students, to exchange ideas and experiences.</p>			
Teaching materials	Lectures and presentation in pdf format, book, bibliography related to the subject, copies of book chapters, articles etc., documentation and measuring equipment, software			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	Weekly review and recording of student progress by the teaching team, within the scheduled tutorial time.			

	Final evaluation through the presentation of a group project (100% of the degree) which is a comprehensive architectural documentation of a historic building and includes: a) historical analysis of the building and the wider area, b) architectural analysis (building location and relationship to its surroundings), description, historic phases of construction - alterations - additions, morphological and typological analysis, c) structural analysis of the building, d) photographic documentation, e) building plans on scales ranging from 1: 100 to 1: 5.
Staff	Professor and 2 teaching assistants
Credits	3 ECTS

No	Course Title	Institution- School Department	Semester, Hours/week	Course Type
6	"Theory of Form II: Documentation, Analysis and Preservation of Historic Sites"	Democritus University of Thrace, School of Architectural Engineering	4th semester of studies, 2nd year Spring semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	<p>The courses "Theory of Form I & II" relate to the analytical phase of approaching architectural values and to the dialogue between past and present. They aim to broaden the student's knowledge of cultural tradition via the study and analysis of both individual architectural works and historic settlements.</p> <p>After completing the "Theory of Form I" course, which focuses on the architectural composition of an existing building through recording and documentation, critical observation and analysis of the creative and construction process, in the context of "Theory of Form II" course the approach to architectural heritage extends to the scale of historical settlements.</p> <p>The purpose of this course is to contribute to the identification and understanding of traditional settlements throughout Greece, and at the same time to promote the need for their protection.</p> <p>This course is the second one in the Morphology educational cycle and its area of focus is the Old town of Xanthi as a whole. It is divided into three distinct sections:</p> <p><u>1st section:</u> Morphological Analysis of Xanthi- General Characteristics.</p> <p>It concerns the whole urban structure of Xanthi based on bibliographic research and in-situ observations.</p> <p>Specifically, the subjects under analysis are:</p> <p>a) The location of the city, Geomorphological features & relationship to the wider area. b) Historical analysis. c) Basic structural features of the city: Traffic, General form of development, Land uses.</p> <p><u>2nd section:</u> Analysis of the Structure of the Historic Settlement (Old Town of Xanthi)</p> <p>The second section focuses on the analysis - documentation of the historical settlement of the Old Town of Xanthi, in the sense of identifying its urban and architectural evolution.</p> <p>Specifically, they examine the following systems:</p> <p>a) the routes, b) the building forms/shells (relationship of structured - unstructured space), c) the free spaces (public, private), d) the landmarks.</p> <p>The graphical representation of these systems on maps leads to an understanding of the morphology and typology of the historic urban fabric. Furthermore, the students analyze the architecture of the historic building stock (typology, morphology, means of construction).</p> <p><u>3rd section:</u> Analysis - Documentation of a Selected Block and its Buildings.</p>			

	<p>This last section of the project focuses on a selected block inside the historic settlement (different for each student group), that constitutes the unit of the urban development. This section is organized into two phases:</p> <p>1st Phase: Documentation and recording of each building as a unit.</p> <p>2nd Phase: Examination - documentation of the building front, as an integrated whole within the historical settlement.</p> <p>After implementing all of the above, the course "Theory of Form II" provides students with the appropriate methodology for approaching a historical settlement, constituting the "guide" for the preparation of a comprehensive study on its protection.</p>
Teaching methodologies	<p>Language: Greek, English in cases of Erasmus students</p> <p>Students collaborate and form groups of 3-4 persons. Also, the building is different for every student group.</p> <p>Every week the course starts with a lecture and continues with tutorial sessions, during which the tutors oversee the progress of the students.</p> <p>Moreover, the groups are asked to present their overall progress at defined intervals, in the presence of all students, to exchange ideas and experiences.</p>
Teaching materials	Lectures and presentation in pdf format, book, bibliography related to the subject, (copies of book chapters, articles etc.), documentation and measuring equipment, software
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)
Evaluation methods	<p>Weekly review and recording of student progress by the teaching team, within the scheduled tutorial time.</p> <p>Final evaluation through the presentation of a group project (100% of the degree) which is a comprehensive study of the documentation and analysis of a historical settlement, with an emphasis on a selected block.</p>
Staff	Professor and 2 teaching assistants
Credits	3 ECTS

No	Course Title	Institution-School Department	Semester, Hours/week	Course Type
7	“Theory of Form III: Morphological Analysis and Reintegration of Contemporary Buildings in Historic Sites”	Democritus University of Thrace, School of Architectural Engineering	5th semester of studies, 3rd year Winter semester 4 hours/week, 13 lessons/ semester	Elective
Course content	<p>The main objective of this course is the assessment of the morphological and functional parameters of integrating a new building volume into a historic area.</p> <p>The integration of new buildings into an existing built environment should be characterised by respect for the architectural heritage and offer opportunities for creative coexistence between traditional and modern architecture. Architectural design in historic context should creatively assimilate the forms and types found in the preserved historic buildings of the surrounding area. The goal is not to imitate the forms of the past but to create buildings which reflect their era without altering the image of the protected settlement.</p>			
Teaching methodologies	<p>Language: Greek, English in cases of Erasmus students</p> <p>Students collaborate and form groups of 2-3 persons. Every week the course starts with a lecture and continues with tutorial sessions, during which the tutors oversee the progress of the students.</p> <p>Moreover, the groups are asked to present their overall progress at defined intervals, in the presence of all students, to exchange ideas and experiences.</p> <p>The students are asked to complete a project of designing and integrating a new building within a ruined shell located in the Old Town of Xanthi. They should take into consideration the special regulation regarding the design of modern structures within the limits of the historic area.</p>			
Teaching materials	Lectures and presentation in pdf format, bibliography related to the subject (copies of book chapters, articles etc.), drawings in CAD format			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	<p>Weekly review and recording of student progress by the teaching team, within the scheduled tutorial time.</p> <p>Final evaluation through the presentation of a group project (100% of the degree) which is an architectural study for the construction of a new building in the Old Town of Xanthi. Each student group has to carefully select a new function for the building which will constitute a case of adaptive reuse.</p>			
Staff	Professor and 2 teaching assistants			
Credits	3 ECTS			

No	Course Title	Institution -School Departme nt	Semester, Hours/week	Course Type
9	“Theory of Form IV: Morphological Analysis, Reintegration and Rehabilitation of Monuments and Archaeological Sites in urban and non-urban areas”	Democritus University of Thrace, School of Architectural Engineering	8th semester of studies, 4th year Spring semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	<p>After the completion of the three previous courses of “Theory of Form” educational cycle, in the context of “Theory of Form IV,” the students are asked to apply their knowledge and experiences on specialized subjects, such as the integration of new buildings or structures in historic areas or archaeological sites, always having as a purpose the protection and preservation of the historic environments.</p> <p>The main subject of this course is the architectural design of interventions and additions in the remaining buildings of an old mining complex, located in the village of Limenaria in the island of Thasos. The mining complex of Limenaria is an important monument of industrial heritage, the historical and scientific value of which is confirmed by numerous institutional declarations by the Ministry of Culture and resolutions of other institutions in Greece such as TICCIH and ICOMOS. Unfortunately, this industrial site is currently abandoned and needs immediate protection.</p>			
Teaching methodologies	<p>Language: Greek, English in cases of Erasmus students</p> <p>The teaching methodology includes both lectures and practical applications, group and individual projects.</p> <p>The lectures regard the theoretical approach to the course content and the group project consists of the practical training of the students in the areas of documentation - analysis, architectural composition, the application of the specialized theoretical knowledge of the course. Besides, as part of the introduction to the course, students are called to conduct short theoretical projects individually.</p> <p>Students collaborate and form groups of 3-6 persons. Each group selects one out of nine areas in the mining complex to work on. Every week the course starts with a lecture and continues with tutorial sessions, during which the tutors oversee the progress of the students.</p> <p>Moreover, the groups are asked to present their overall progress at defined intervals, in the presence of all students, to exchange ideas and experiences.</p> <p>A lesson is devoted to visiting the study area, to identify the area, photographic documentation, familiarizing with the site and discussing with the lecturers on issues related to the buildings of the complex.</p>			
Teaching materials	<p>Along with the bibliographical material students will be provided with the plans of the area to be studied, for them to focus on the challenges of the subject and on the specific parameters that characterize interventions in historical sites.</p>			
Class infrastructure	<p>Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)</p>			
Evaluation methods	<p>Weekly review and recording of student progress by the teaching team, within the scheduled tutorial time.</p>			

	Final evaluation through the presentation of a group project (100% of the degree) which is an architectural study for the rehabilitation of a selected area in the mining complex of Limenaria, in Thasos.
Staff	Professor and 3 teaching assistants
Credits	3 ECTS

No	Course Title	Institution-School Department	Semester, Hours/week	Course Type
8	Restoration, Redesign and Revival of Historic Buildings and Sites I	Democritus University of Thrace, School of Architectural Engineering	7th semester of studies, 4th year Winter semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	The aim of this course is for students to become familiar with the issues of cultural tradition as formulated in monuments and historic sites, and to acquire the basic knowledge and experience in the preservation, restoration, rehabilitation and promotion of historical buildings and sites.			
Teaching methodologie s	Theoretical Lectures Practical applications Site visits/ Fieldwork			
Teaching materials	Lectures and presentation in pdf format, bibliography related to the subject (copies of book chapters, articles etc.), drawings in CAD format, documentation and measuring equipment, software			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	Student evaluation is based on a. participation/ attendance to the course and to the weekly tutorials, taking into account the weekly attendance forms completed by the teachers (10%) b. the quality and completeness of the two intermediate presentations on the topic and the ability to support their options and proposals (10%) c. the final project they will prepare and present (60%).			
Staff	Professor and teaching assistants			
Credits	3			
Notes				

No	Course Title	Institution -School Departme nt	Semester, Hours/week	Course Type
1	History of Architecture and Art I	Democritus University of Thrace, School of Architectural Engineering	1st semester of studies, 1st year Winter semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	<u>History of Architecture I</u> Architecture in the Greek area: Prehistoric Architecture, Ancient Near East, Egypt and Mesopotamia, Minoan - Cycladic - Mycenaean civilization, Geometric and Early Archaic Period, Ancient Greece (Archaic - Classical - Hellenistic Era), Roman architecture Early Christian and Byzantine architecture: Historical background, theological background, materials and techniques, forms and functional elements, architects and sponsors, The architecture during the Early Christian period, The Byzantine architecture, The spread of Byzantine architecture in the West and the East <u>History of Art I</u> Art before the invention of writing, The people of Mesopotamia, Africa, The Aegean Civilizations: Cycladic Art - Minoan Art, Mainland Greece: Mycenaean Culture, Ancient Greek World: Geometric art, Archaic art, Black-and-red ceramics, Classic art, Hellenistic Art, Roman art, Byzantine art, Medieval Western Art			
Teaching methodologies	Theoretical lectures			
Teaching materials	Lectures and presentations are available online, books			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	Written exams and individual report.			
Staff	Professor			
Credits	3			

No	Course Title	Institution-School Department	Semester, Hours/week	Course Type
2	History of Architecture and Art II	Democritus University of Thrace, School of Architectural Engineering	2nd semester of studies, 1st year Spring semester 4 hours/week, 13 lessons/semester	Mandatory
Course content	<p><u>History of Architecture II</u></p> <p>The architecture in the Balkans and the Greek area during the Ottoman period: The effects of Constantinople and Central Europe, Traditional settlements and houses, Buildings with defensive, social and economic functions, Religious post-Byzantine architecture, The Ottoman architecture - The new look of the Balkan city</p> <p>Venetian rule: Planning elements and settlement organization, Urban houses, mansions, villas, farmhouses, Towers, Public buildings, Churches, monasteries.</p> <p>The neoclassical architecture in Greece - 19th century: Influences of European historical rhythms.</p> <p><u>History of Art II</u></p> <p>From empirical realism to social realism, Flemish art, Italian Renaissance, Baroque, The art of the 18th century, 19th Century Art: Neoclassicism, Romanticism, Orientalism, Realism.</p>			
Teaching methodologies	Theoretical lectures			
Teaching materials	Lectures and presentations are available online, books			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	Written exams and individual report.			
Staff	Professor			
Credits	3 ECTS			

No	Course Title	Institution-School Department	Semester, Hours/week	Course Type
3	History of Architecture and Art III	Democritus University of Thrace, School of Architectural Engineering	3rd semester of studies, 2nd year Winter semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	<p><u>History of Architecture III</u></p> <p>The architecture of the Late Middle Ages, New and Modern Europe: Carolingian and Roman style, Gothic style, Renaissance - Mannerism – Baroque, Classicism and garden design, Rococo – Romance, 18th Century: Enlightenment - Palladian Revival - Archaeological Neoclassicism in Europe. Gothic Revival. Romantic gardens. Structural Neoclassicism. Revolutionary Neoclassicism, Historicism, 19th Century, Second Imperial Style - Victorian Gothic Style, Architecture after the Industrial Revolution: High Tech Construction, Gothic revival, School of Chicago, Birth of modern architecture, 20th century, Prairie School, Organic architecture, Art Nouveau, Art Deco, The Glasgow School and the Arts & Crafts Movement, Secession - School of Vienna, Jugendstil - German Workers' Association</p> <p><u>History of Art III</u></p> <p>European Modernism: Impressionism. Post-Impressionism. Symbolism. Fear. Expressionism. Cubism. Orphism. Futurism. Subtraction. Hypertension. Constructivism. Nanny. Surrealism</p>			
Teaching methodologies	Theoretical lectures			
Teaching materials	Lectures and presentations are available online, books			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	Written exams and individual report.			
Staff	Professor			
Credits	3 ECTS			

No	Course Title	Institution-School Department	Semester, Hours/week	Course Type
5	History of Architecture and Art IV	Democritus University of Thrace, School of Architectural Engineering	4th semester of studies, 2nd year Spring semester 4 hours/week, 13 lessons/ semester	Mandatory
Course content	<u>History of Architecture IV</u> Modern Architecture: Industrial City - Classical Rationalism, Futurism. Expressionism in Germany, Mainly Modernism: De Stijl's Dutch School, The Bauhaus School, suprematism, Constructivism, Rationalism in the Soviet Union, Purism, International Style, Architecture and the State <u>History of Art IV</u> Artistic movements after 1945: Abstract Expressionism. European abstraction, Neo-Dada. Pop Art. Art and Technology. Nouveau realism. Minimal art. Conceptual art. Process art. Art Povera. Art in space. New Realism. Tribal Art.			
Teaching methodologies	Theoretical lectures			
Teaching materials	Lectures and presentations are available online, books			
Class infrastructure	Classroom with projector, Wi-Fi connection, on-line communication with students (e-class)			
Evaluation methods	Written exams and individual report.			
Staff	Professor			
Credits	3 ECTS			

2.1.2 Activities of the “Laboratory of Architectural Design and Research III: Theory of Forms and Preservation Studies”.

This Laboratory, under the leadership of Professor Nikolaos Lianos, covering both educational and research needs contribute to the dissemination to students, postgraduate researchers and PhD students of the necessary knowledge and expertise in the field of Architectural Design and Construction. More specifically, in the sectors of Theory of Form, Preservation, History of Architecture as well as systems of contemporary methods for the documentation of buildings and sites, such as 3D Laser Scanning and Digital Photogrammetry. Also, the laboratory provides the infrastructure for the conduct of laboratory research, which is formulated and presented not only by students and researchers via their dissertations, undergraduate thesis or postgraduate work (PhD) but also through the participation in research projects. Finally, the laboratory provides specialized knowledge and services of an architectural, aesthetic and social character to ensure a holistic architectural, technological and historical education.

i) Research Programs related to Heritage Education.

No	Research Program Title	Duration	Funding Institution
1	Recording of Monuments in Eastern Macedonia and Thrace	01/03/2006 - 31/05/2010	E.T.A.A. Department of Engineering
2	Study for the Documentation and Conservation Proposal of Velvento Historic Centre	01/04/2009 - 16/07/2010	Municipality of Velvento
3	Conference on Construction History	15/11/2007 - 28/02/2015	Private funding, DUTH Special Account for Research Funds
4	Workshop on Theoretical and Practical Conservation of Traditional Buildings in the Mastorochochia of Kozani	01/07/2010 - 30/06/2013	E.T.A.A. Department of Engineering, Private funding, Municipality of Velvento
5	Study on the Implementation of 3D Laser Scanning for the Documentation and Conservation of Monuments and Archaeological Sites	15/11/2011 - 14/11/2014	E.T.A.A. Department of Engineering
6	Workshop on Theoretical and Practical Conservation of Traditional Buildings in the Mastorochochia of Kozani	01/07/2012 - 30/09/2012	Private funding
7	Study on the Implementation of 3D Laser Scanning for the Documentation of Historic Settlements in the Municipality of Alexandroupoli	25/02/2013 - 31/10/2015	Municipality of Alexandroupoli Σ
8	Virtual Reality in Cultural Heritage Education (Tempus VirCult)	15/10/2012 - 14/10/2016	European Commission
9	Study on the Implementation of 3D Laser Scanning for Monument Documentation: 3D Modeling of Ancient Theatre in Gitana	10/01/2013 - 09/07/2013	"Diazoma" Non-profit Association

10	Workshop on Theoretical and Practical Conservation of Traditional Buildings in the Mastorochochia of Kozani	01/07/2013 - 30/06/2016	E.T.A.A. Department of Engineering
11	Study on the Implementation of 3D Laser Scanning for Monument Documentation: 3D Modeling of Ancient Theatres in Avdera and Samothraki	24/09/2013 - 24/01/2014	"Diazoma" Non-profit Association
12	Educational Applications for the Documentation and recording of Monuments and Archaeological Sites with the use of 3D Laser Scanner	01/11/2014 - 31/10/2019	E.T.A.A. Department of Engineering
13	Education and Capacity Building in Museum Studies (Edu-MUST)	22/03/2017 - 15/10/2019	European Commission
14	Internship Program for Democritus University Students	01/11/2018 - 31/10/2022	Ministry of Education
15	Digital Documentation Applications with use of 3D Laser Scanner	15/01/2020 - 14/01/2023	E.T.A.A. Department of Engineering

In the above table, one may have an overview of the research programs in which the Laboratory has participated over time. For the purposes of this report, it is considered necessary to provide additional information for the two projects (numbers 8 & 13) as they are both related to heritage education in Egypt.

No 8: Tempus Project: "Virtual Reality in Cultural Heritage Education (VirCult)"

VirCult was a Tempus funded project whose main objective was to establish virtual reality academic system for Egyptian cultural heritage education and online virtual campus targeting students, archaeologists, tourist guides and Egyptologists all over the world, achieved through following main tasks:

- Develop stereoscopic 3D virtual reality models for Egyptian surface and underwater sites covering the ancient Egyptian, Greco-Roman, Coptic and Islamic eras and linking them with relevant curricula at the Egyptian universities.
- Develop virtual reality lecture halls targeting a large number of audiences to transfer these remote sites to them not vice versa.
- Develop 3D internet-based virtual campuses for the target groups to access remotely for academics and research.
- Modernize/Develop new courses in the field accommodating the new methodologies maximizing the courses' outcomes.

The wider objective was to produce a new generation of archaeologists having a deep understanding of the cultural heritage of Egypt, which is among the largest worldwide, who can analyse the cultural evolution of mankind over 7000 years. This was achieved by integrating engineering technologies with cultural heritage in terms of using virtual reality technology in modelling precious heritage sites in Egypt, embed them in the relevant courses and present them to the target students. This way, students are immersed in these sites while linked online to global libraries overcoming the current limitations.

The institutions that collaborated in the context of VirCult were Ain Shams University (ASU), Alexandria University (AU), Nile University (NU), Damanhour University (DamU), South Valley University (SVU), Bibliotheca Alexandrina (BA), Ministry of State for Antiquities (MSA), Archaeological Society of Alexandria (ASA) from Egypt and University of Nottingham (UNOTT) in the UK, Università di Catania (UNICAT) in Italy, Democritus University of Thrace (DUTH) in Greece.

Responsibility of the “Laboratory of Architectural Design and Research III: Theory of Forms and Preservation Studies” was the documentation and study of 11 architectural monuments of various periods in Egypt. The documentation was conducted using a 3D Terrestrial Laser Scanner and the digital model was used in the development of undergraduate and postgraduate educational programs. The organization of education would allow students to virtually visit the monuments to study their morphological features and to fully understand their structure and synthetic principles.

An example of the work carried out during this research project is the scanning mission at the Catacombs site of Kom Elshoqafa in Alexandria, Egypt. The scanning was conducted between the 11th and 16th of February 2015 by a multinational team.

(<http://www.cmauch.org/vircult-third-scanning-mission-11-16-february-2015/>)



Images from the scanning process at the Catacombs site of Kom Elshoqafa.

No 13: Erasmus + Project “Education and Capacity Building in Museum Studies (EduMust)”

Aim and Scope of this projects were developing a new graduate program in museums studies which will utilize newly developed ICT-based teaching and learning tools including 3D laser scanning and virtual reality modelling. The project was adopting a multidisciplinary approach incorporating the humanities, archaeology, museology and heritage management with engineering and information technology. This is evident through the speciality of the project partners and reflected in the developed outcomes.

The project utilized advanced technology in developing new innovative postgraduate Diploma and Master programs in Museum Studies. Moreover, digitizing and modelling museum collections and posting it on-line was expected to foster and promote public and non-formal education which is one of the main tasks of museums.

The study of cultural heritage is multi-disciplinary by nature. Hence, the consortium included specialists in archaeology, engineering, museology and heritage management, collectively provides the expertise & skills required for the project fulfilment.

The institutions that collaborated in the context of EduMust were Ain Shams University, Alexandria University, Damanhour University, Helwan University, French University in Egypt and the Ministry of Antiquities from Egypt, and the University of Southampton, Democritus University of Thrace, École du Louvre, Centre d'Études Alexandrines and Musée royal de Mariemont from Europe.

Responsibility of the “Laboratory of Architectural Design and Research III: Theory of Forms and Preservation Studies” was the training of the Egyptian partners in the field of digital documentation of monuments and artefacts with the methods of laser scanning and digital photogrammetry. This was realized via the conduct of three workshops entitled “3D Digital Visualisation of Artefacts and Sites with use of LIDAR, Photogrammetry and 3D Visualisation concepts” in Egypt (two in the Suez Museum and one in Alexandria) and via the 3D documentation of Suez Museum for the creation of virtual tours. Moreover, the Laboratory contributed to the training of Egyptian partners in the field of Museology via the conduct of a workshop called “Museum Design and Rehabilitation of Archaeological Sites”. During this workshop, the participants travelled to Greece and visited several Greek Museums and sites to become familiar with different methods of artefact display and the implementation of new technologies in Museum studies. This educational workshop was conducted in Greece from 10 to 16 September 2018 and included visits in museums, archaeological sites throughout Greece and one day conference at Xanthi, where the school of Architecture is based.

More information on these workshops may be found in the following links:

https://edumust.edu.eg/local/pages/trainings/suez_3d_digital_visualisation_of_artefacts_and_sites.php

https://edumust.edu.eg/local/pages/trainings/alexandria_3d_digital_visualisation_of_artefacts_and_sites.php

https://edumust.edu.eg/local/pages/trainings/xanthi_museum_studies.php



Images from the workshop “3D Digital Visualization of Artefacts and Sites with use of LIDAR, Photogrammetry and 3D Visualization concepts” at Suez Museum.



Suez Museum 3d scanning process and final model.



Images from the workshop “3D Digital Visualization of Artefacts and Sites with use of LIDAR, Photogrammetry and 3D Visualization concepts” at Alexandria University Museum.

ii) Organization of Workshops related to Heritage Education.

The “Laboratory of Architectural Design and Research III: Theory of Forms and Preservation Studies” has a great activity in organizing workshops on heritage. One may divide the workshops into two large categories a) workshops on building conservation and b) workshops on digital documentation of monuments.

a) Workshops on building conservation.

The Laboratory has conducted a series of workshops entitled “Theoretical and Practical Conservation of Traditional Buildings”, in collaboration with the "Association of Letters and Arts" of Kozani, having as an area of application and study the historic settlements of Mastorochochia.

The purpose of the workshop was:

- the presentation of a scientific methodology for the revival of historic settlements, which, in addition to the promotion of cultural identity, contributes to the efforts for an Urban Sustainable Development.
- highlighting some negative aspects of our country’s conservation policy or deficiencies in our legislation that constitute the main causes of the disappearance of historical evidence,
- informing residents and citizens in general, which is a key prerequisite for the protection of historic buildings and sites,
- for the young participants to learn about the “forgotten” traditional construction methods and their practical application in modern restoration of historic buildings.

The curriculum consisted of eight (8) thematic modules with theoretical and practical content.

The theoretical lessons were conducted by specialized professors from the Democritus University of Thrace, Aristotle University of Thessaloniki, National Technical University of Athens and the University of Patra.

More specifically, the modules were organized as follows:

Module 1: “Basic Concepts and Principles of Monument Protection – Restoration”

Module 2: “Documentation - Recording – Study of the traditional buildings”

Module 3: “Primary protection measures”

Module 4: “Conservation methods- stone masonry”

Module 5: “Stonemasonry conservation, traditional mortar and grout”

Module 6: “Conservation of timber structures”

Module 7: “Traditional Macedonian Architecture”, and finally

Module 8: “Restoration works, experimental construction of mud-bricks”.



The building that was used for the fieldwork during the workshop.



The participants during in situ conservation activities.

b) Workshops on digital documentation of monuments.

The Laboratory has conducted a series of workshops on “Digital Documentation of Monuments with the use of 3D Laser Scanner”. The first one was carried out, from 10 to 16 of May 2014, in the settlement of Limenaria, in the island Thasos. The second workshop was organized in the context of VirCult research program and the third one was held in Adrianoupolis (Edirne) in Turkey from 08 to 13 of June 2015.

The main objective of these workshops was to train students and professionals in the use of new technologies, such as 3d laser scanning and digital photogrammetry, in the area of recording and documentation and to contribute to the protection and conservation of monuments.

The participants could include architects, surveyors, archaeologists, conservators of works of art, promoting interdisciplinary collaboration in the sector of Cultural Heritage.


The program included both theoretical training via lectures and practical applications via fieldwork. Taking as an example the 1st workshop at Thassos, the results of the workshop were the geometrical documentation of the current status of several buildings in the mining complex of Limenaria, the creation of 3D digital models, 2D designs (floor plans, elevations, sections), orthophotos, and virtual reality tour video.



The participants of the 1st workshop on “Digital Documentation of Monuments with the use of 3D Laser Scanner” during fieldwork.

2.2 Undergraduate Heritage studies in other Greek Universities.

Under the umbrella of cultural heritage education in Greece, a wide range of graduate studies could be analyzed and presented. Generally, the fields could sum up in archaeology, literature, philosophy, theatre, history, architecture, fine arts, tourism, social sciences etc. For this reason, the narration of our team focuses on explicit studies on Protection, Conservation and Restoration of Cultural Heritage. In the following tables, one may find a detailed presentation of courses related to Heritage offered in other Departments of Architecture in Greek Universities, and more specifically by the Aristotle University of Thessaloniki (AUTH) and the National Technical University of Athens (NTUA).


Logo	Institution- School Department	University	Website	Category			
	SCHOOL OF ARCHITECTURE (c1956-57)	AUTH (c1925)	https://architecture.web.auth.gr/en/home/	INTEGRATED MASTER			
Syllabus	GENERAL	https://qa.auth.gr/en/studyguide/20000046/current (ACCORDING TO E- STUDY GUIDE 2018-2019) https://architecture.web.auth.gr/wp-content/uploads/2020/02/SCHOOL-OF-ARCHITECTURE_AUTH_STUDY-GUIDE-2018-2019_DIGITAL-USE-1.pdf					
	CULTURAL HERITAGE EDUCATION	SEMESTER/ attendance type COMPULS ORY:C ELECTIVE: E	COURSE	E-STUDY GUIDE	WEEKLY HOURS	ECTS	LANGUAGE
		1 ST C	HISTORY OF ARCHITECTURE 20 TH CENTURY	https://qa.auth.gr/en/class/1/600148131	3	3	GREEK/ ENGLISH
		2 ^D C	ART, CULTURE 20 TH – 21 ST CENTURY	https://qa.auth.gr/en/class/1/600148145	3	3	GREEK/ ENGLISH
		3 ^D C	HISTORY OF ARCHITECTURE: EAST MEDITERRANEA N & GREEK AREA (EARLY PREHISTORIC, GREEK ANTIQUITY, ROME, BYZANTIUM, POST BYZANTINE AND OTTOMAN PERIODS)	https://qa.auth.gr/en/class/1/600148134	3	3	GREEK/ ENGLISH
		4 TH E	INTRODUCTION TO RESTORATION OF HISTORICAL BUILDINGS	https://qa.auth.gr/en/class/1/600143396	5	6	GREEK/ ENGLISH
		4 TH C	CITY AND URBAN	https://qa.auth.gr/en/class/1/600148147	2	3	GREEK/ENGLIS H/FRENCH

			PLANNING: HISTORICAL EVOLUTION AND THEORETICAL APPROACHES				
		4 TH C	THEORIES OF ARCHITECTURE 1: CONCEPTIONS OF ARCHITECTURAL CREATION	https://qa.auth.gr/en/class/1/600148163	2	3	GREEK
		5 TH C	ART HISTORY: ANCIENT GREECE, ROME, BYZANTINE, ISLAM	https://qa.auth.gr/en/class/1/600148138	2	3	GREEK/ENGLISH
		6 TH C	SOCIAL THEORIES OF SPACE AND ARCHITECTURE	https://qa.auth.gr/en/class/1/600148151	2	3	GREEK
		7 TH E	DESIGN STUDIO 7: ARCHITECTURAL DESIGN IN HISTORICAL CONTEXT	https://qa.auth.gr/en/class/1/600143355	8	12	GREEK/ENGLISH/GERMAN*
		7 TH E	THEORIES OF ARCHITECTURE 2: THEORIES OF ARCHITECTURE. PHILOSOPHY, ERA, SPACE	https://qa.auth.gr/en/class/1/600148141	2	3	GREEK
		7 TH C	HISTORY OF ART: WEST 9th- 19th CENTURY	https://qa.auth.gr/en/class/1/600148142	2	3	GREEK/ENGLISH
		7 TH C	HISTORY OF ARCHITECTURE: WEST 9th-19th CENTURY	https://qa.auth.gr/en/class/1/600148143	2	3	GREEK/ENGLISH*/ GERMAN*/FRENCH*/ITALIAN*
		8 TH EE	SPECIALIZATION S, INSIGHTS, EXPERIMENTATIONS: HISTORY OF ARCHITECTURE - SPECIAL ISSUES (ANTIQUITY TO	https://qa.auth.gr/en/class/1/600161901	3	6	GREEK/ENGLISH*/ FRENCH*/ITALIAN*

			19th CENTURY AD)				
		8 TH EE	SPECIALIZATION S, INSIGHTS, EXPERIMENTATIONS: MODERN GREEK ART IN GLOBAL CONTEXT	https://qa.auth.gr/en/class/1/600144967	3	6	GREEK/ENGLISH
		8 TH EE	SPECIALIZATION S, INSIGHTS, EXPERIMENTATIONS: HISTORIC BUILDING SYSTEMS	https://qa.auth.gr/en/class/1/600144948	4	6	GREEK/ENGLISH
		8 TH EE	ELECTIVE MODULE: MODERN ART FROM 19TH TO 21ST CENTURY	https://qa.auth.gr/en/class/1/600144961	2	3	GREEK/ENGLISH*
		9 TH EE	HISTORIC ENSEMBLES AND SITES: REDESIGN - REGENERATION	https://qa.auth.gr/en/class/1/600143376	8	12	GREEK/ENGLISH
		9 TH EE	MUSEOLOGY	https://qa.auth.gr/en/class/1/600143378	8	12	GREEK/ENGLISH/ GERMAN*/FRENCH*/ITALIAN*
Curriculum	<p><i>“The School curriculum aims at developing an architecture education that will enable the graduates of the School to undertake projects that span across all scales of design, from industrial to urban design.”(..) “The curriculum aims to educate architects, not only to train professionals. The curriculum was set up to ensure a wide and overall architectural education that spans from Architectural and Urban Design to Landscape and Environmental Design, and from Spatial and Urban Planning to Restoration of Buildings and Complexes and Interior and Industrial Design. Its structure recognizes the necessity of self-standing integration of courses in history, theory, art, building technology which is considered fundamental elements of architectural thinking and praxis. A structural rudiment of the curriculum is the potential and the support it provides for the intercourse and integration of all these fields of knowledge in the par excellence place of architectural creation which is the 7 Expanded Design Studios. The contemporary 5-year curriculum is composed out the Expanded Studios and additionally through 2 Introductory Design Studios, 5 Specialization Studios, 2 selected Design Insights Studios, the theoretical courses, along the Diploma Research Thesis and Diploma Project.” “It is structured in 10 semesters. It comprises of eight different categories of courses with a different number of ECTS each summing up to 300”. “The general education our graduates receive from the School of Architecture of AUTH allows them to comprehend the essence of the profession of architecture and the vital role this plays in the social and cultural development and life. They have practised dealing with all constraints imposed</i></p>						

	<p><i>on architectural design and are, therefore, in a position to deal with constraints imposed by individuals, social groups and institutions, building and other technical regulations, the planning authorities and the cost of construction. “</i></p> <p><i>E STUDY GUIDE CONTAINS A SHORT BUT ACCURATE DESCRIPTION OF THE “LEARNING OUTCOMES” “GENERAL COMPETENCES”</i></p>
Course content	<p><i>IN THE PARTICULAR FIELD (DEPARTMENT D) HISTORY OF ARCHITECTURE, HISTORY OF ART, ARCHITECTURAL MORPHOLOGY & RESTORATION</i></p> <p><i>E STUDY GUIDE CONTAINS A SHORT BUT ACCURATE DESCRIPTION OF THE “COURSE CONTENT”</i></p>
Teaching methodologies	<ul style="list-style-type: none"> ○ LECTURES ○ LABORATORY WORK ○ SEMINARS/CONFERENCES ○ WORKSHOPS/FIELD TRIPS
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK ○ NOTES-BIBLIOGRAPHY
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ ICT CLASS ○ DIGITAL DESIGN & FABRICATION LAB ○ STUDIO SPACES & EXHIBITION SPACES
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ PROJECT
Staff	<p>https://architecture.web.auth.gr/en/people/</p> <p>app 1:30 OUR TEAM REALISED IN A SHORT SURVEY AMONG CURRENT STUDENTS THAT TODAY THE NUMBER OF PERMANENT STAFF DOESN'T FULFILL THEIR EXPECTATIONS FOR CONSTANT COLLABORATION</p>
Admission	<ul style="list-style-type: none"> ○ ACCORDING TO SEMESTER & ○ ACCORDING TO THE COURSES ATTENDED SUCCESSFULLY

	<p>(ANALYTICALLY SHOWN IN THE FIELD OF PREREQUISITES/REQUIRED FIELD OF E – STUDY)</p> <p><i>“To be awarded a Diploma in Architecture/Engineering students have to follow and to be assessed on theoretical and design modules which are organised in three sections: the introductory programme, the programme of basic studies and the diploma programme (total ECTS 300). Studies are completed with the completion of the two final dissertations: the final diploma design theses and the final diploma research theses that count to 30 and 12 ECTS credits respectively.”</i></p>
Notes	<p>THERE ARE COURSES WHICH HAVE BEEN INTEGRATED INTO OTHER COURSES SUCH AS ARCHITECTURAL MEASURE DRAWING & HISTORICAL BUILDING SURVEY</p> <p>*ONLY THE EXAMINATION CAN BE IN THESE LANGUAGES</p>

Logo	Institution-School Department	University	Website				Category
	SCHOOL OF ARCHITECTURE (c1917)	NTUA (c1914)	http://www.arch.ntua.gr/en				INTEGRATED MASTER
Syllabus	GENERAL	http://www.arch.ntua.gr/en/graduate-courses					
	CULTURAL HERITAGE EDUCATION	SEMESTER/ attendance type COMPULSORY: C ELECTIVE: E	COURSE	E-STUDY GUIDE	WEEKLY HOURS	ECTS	LANGUAGE
		1 ST C	HISTORY AND THEORY: FROM PREHISTORIC TO THE HELLENISTIC PERIOD	http://www.arch.ntua.gr/en/course_insance/13434	4	4	
		2 ^D C	HISTORY AND THEORY: FROM THE ROMAN TO THE BYZANTINE PERIOD	http://www.arch.ntua.gr/en/course_insance/14247	4	4	
		3 ^D C	HISTORY AND THEORY: MEDIEVAL WEST, RENAISSANCE , BAROQUE	http://www.arch.ntua.gr/en/course_insance/13438	4	4	
		4 TH C	HISTORY AND THEORY: FROM THE NEOCLASSICAL TO THE MODERN PERIOD	http://www.arch.ntua.gr/en/course_insance/14253	4	4	
	4 TH C	ARCHITECTURAL SURVEY: SYSTEMATIC SURVEY OF A BUILDING (TECHNIQUES IN RECORDING, DOCUMENTING, ANALYZING AND INTERPRETING	http://www.arch.ntua.gr/en/course_insance/14254	3	3		

			BUILDINGS FROM NEOCLASSICISM TO MODERNISM, INCLUDING INDUSTRIAL CRAFT BUILDINGS)				
		5 TH C	ANALYSIS AND STUDY OF HISTORICAL MONUMENTS AND ENSEMBLES	http://www.arch.ntua.gr/en/course_ins tance/13626	6	6	
		5 th E	LATE ANTIQUITY AND BYZANTINE HISTORY OF PALESTINE, SYRIA, ARMENIA AND NORTH AFRICA	http://www.arch.ntua.gr/en/course_ins tance/14896	3	3	
		5 th E	SPECIAL TOPICS IN HISTORY AND THEORY: THE FLORENCE QUATTROCENTO AND THE LATE RENAISSANCE IN ROME (1401-1527)- PAINTING, SCULPTURE AND ARCHITECTURE	http://www.arch.ntua.gr/en/node/752	3	3	
		6 TH C	HISTORY AND THEORY: CONTEMPORARY TIMES	http://www.arch.ntua.gr/en/course_ins tance/14263	4		
		6 TH E	PROTECTION & RESTORATION OF MONUMENTS & HISTORIC ENTITIES	http://www.arch.ntua.gr/en/node/765	3	3	
		6 TH E	SPECIAL TOPICS IN THE	http://www.arch.ntua.gr/en/node/771	3	3	

			HISTORY OF ART: BYZANTINE MONUMENTAL PAINTING				
		7 TH E	GREEK ARCHITECTURE: AN INTRODUCTION (HISTORICAL STRATIFICATION, MODERN ERA, CRITICAL APPROACH)	http://www.arch.ntua.gr/en/course_in_stance/13392	3	3	ONLY FOR ERASMUS STUDENTS
		7 TH E	SPECIAL TOPICS IN HISTORY AND THEORY: PUBLIC ARCHITECTURE AND CULTURE	http://www.arch.ntua.gr/en/taxonomy/term/208	3	3	
		8 TH E	SPECIAL TOPICS IN BUILDING TECHNOLOGY : RESTORATION OF TRADITIONAL BUILDINGS	http://www.arch.ntua.gr/en/node/808	3	3	
Curriculum	<p><i>«The Graduate studies at the NTUA School of Architecture last five academic years and equal to a Master degree (MA). The main aim of our Curriculum is an education that will mould professionals who will possess structured views on architecture, will understand in-depth the social realities they will be facing when in practice, will have attained the necessary technical knowledge and building expertise and will have sharpened their senses and spirit to be able to meet in a complete manner the developing architectural ideas.</i></p> <p><i>The programme includes five basic thematic areas of courses, according to their syllabus: Design - Theory, History-theory, General Education, Visual Expression and Representation, Urban and Regional Planning and Architectural Technology. (...)</i></p> <p><i>The curriculum of the NTUA School of Architecture is based on the general requirements of higher education scientific faculties and, at the same time, draws from the particular social needs as well as the demands of architectural production as they evolve both in the immediate milieu of professional architects in Greece and abroad, under the influence of political, social, financial and cultural transformations. As the NTUA School of Architecture is a state-run academic institution, offering tuition-free education to its students, it is unavoidable that the structuring of its</i></p>						

	<i>programme is directly connected and affected by emerging social demands and the institutional framework of Greek public education.»</i>
Course content	<p><i>IN THE PARTICULAR FIELD (DEPARTMENT I)</i></p> <p>OF HISTORY OF ARTS & ARCHITECTURE :</p> <p>MULTIDISCIPLINARY, ANALYSIS THROUGH DIFFERENT DISCIPLINES SUCH AS HISTORIOGRAPHY, ETHNOGRAPHY, AESTHETICS, GEOGRAPHY, ARCHAEOLOGY, SOCIAL SCIENCES, SOCIAL ANTHROPOLOGY, ENVIRONMENT AND SEISMICITY ETC</p> <p>AND CONSERVATION, PRESERVATION AND RESTORATION OF MONUMENTS AND HISTORIC ENSEMBLES</p> <ol style="list-style-type: none"> 1. LEARNING TECHNIQUES OF SURVEYING <ul style="list-style-type: none"> ○ RECORDING, DOCUMENTING, ANALYZING AND INTERPRETING THE FACTORS WHICH MOLDED THE SETTLEMENTS (RESIDENTIAL/HISTORICAL/MONUMENTAL) IMAGE (MORPHE & STRUCTURE & TYPOLOGY): I. TANGIBLE (TOPOGRAPHY, CLIMATE, AVAILABLE MATERIALS, CONSTRUCTION, TECHNOLOGY) II. INTANGIBLE (SOCIAL, ECONOMIC, CULTURAL) AS IDENTIFIED BY THE PLACES HISTORY AND IN SITU OBSERVATION ○ RECORDING, DOCUMENTING, ANALYZING AND INTERPRETING THE FACTORS WHICH MOLDED THE SETTLEMENTS (RESIDENTIAL/HISTORICAL/MONUMENTAL) PATHOLOGY 2. INTERVENTIONS IN THEORY & DESIGN STUDIOS FOR THE PRESERVATION, RESTORATION AND THE ADAPTATION OF THE HISTORIC BUILDINGS AND COMPLEXES TO CONTEMPORARY LIVING STANDARDS (WITH THE CONTRIBUTION OF ARCHITECTS, URBAN PLANNERS, AND CIVIL ENGINEERS AS STAFF)
Teaching methodologies	<ul style="list-style-type: none"> ○ LECTURES ○ LABORATORY WORK ○ SEMINARS/CONFERENCES ○ WORKSHOPS/FIELD TRIPS ○ APPLIED RESEARCH
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK ○ NOTES-BIBLIOGRAPHY
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ ICT CLASS ○ DIGITAL DESIGN & FABRICATION LAB ○ STUDIO SPACES & EXHIBITION SPACES
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT

	<ul style="list-style-type: none"> ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ PROJECT
Staff	http://www.arch.ntua.gr/en/page/1356 INTERDISCIPLINARY COLLABORATION
Admission	<ul style="list-style-type: none"> ○ ACCORDING TO SEMESTER & ○ ACCORDING TO THE COURSES ATTENDED SUCCESSFULLY
Notes	

3. Postgraduate Studies on Heritage.

3.1 List of postgraduate Heritage studies in Greece.

No	Postgraduate Course title	University	Department	Notes	Link
1	European Master of Classical Cultures	National and Kapodistrian University of Athens	Department of History & Archaeology	Taught in English, in collaboration with other European universities	https://emccs.uni-muenster.de/index.php/el/
2	Archaeology and History of the Ancient World: from the Early Prehistory to Late Antiquity	National and Kapodistrian University of Athens	Department of History & Archaeology		http://www.arch.uoa.gr/etapyxiakes-spydes/pms-tmimatos/arxaiologia-kai-istoria-toy-arxaioy-kosmoy-apo-thn-apatath-proistoria-ews-thn-ysterh-arxaiothta.html http://en.arch.uoa.gr/postgraduate-studies/departamental-programmes.html
3	The world of Byzantium: History and Archaeology	National and Kapodistrian University of Athens	Department of History & Archaeology		http://www.arch.uoa.gr/etapyxiakes-spydes/pms-tmimatos/byzantinos-kosmos-istoria-kai-arxaiologia.html http://en.arch.uoa.gr/postgraduate-studies/departamental-programmes.html
4	Modern and Contemporary History and History of Art	National and Kapodistrian University of Athens	Department of History & Archaeology		http://www.arch.uoa.gr/etapyxiakes-spydes/pms-tmimatos/neoterh-kai-sygyronh-istoria-kai-istoria-ths-texnhs-modern-and-contemporary-history-and-history-of-art.html http://en.arch.uoa.gr/postgraduate-studies/departamental-programmes.html
5	Monument Management: Archaeology, City and Architecture	National and Kapodistrian University of Athens	Department of History & Archaeology	Interdisciplinary Master's Program, in collaboration with the University of Patra, Department of Architecture and the University of the Aegean, Department of Cultural Technology.	http://www.dpmsd-iax.arch.uoa.gr/
6	Museum Studies	National and Kapodistrian University of Athens	Department of History & Archaeology	Interdisciplinary Master's Program, in collaboration with the Department of Geology and Geoenvironment, and with the Department of Artefact Conservation of the Technical Educational Institution of Athens	http://www.museum-studies.uoa.gr/
7	Protection of Monuments, Direction A: Conservation and Restoration of Historic Buildings and Sites	National Technical University of Athens (NTUA)	School of Architecture	Interdisciplinary Master's Program, in collaboration with the Departments of Chemical Engineering, Structural Engineering and Surveying Engineering of NTUA	http://www.arch.ntua.gr/page/1210

8	Protection of Monuments, Direction B: Conservation of Building Materials	National Technical University of Athens (NTUA)	School of Architecture	Interdisciplinary Master's Program, in collaboration with the Departments of Chemical Engineering, Structural Engineering and Surveying Engineering of NTUA	http://laertis.chemeng.ntua.gr/dpms_syvtrnrsn/
9	History and Recording	Ionian University	Department of History		https://history.ionio.gr/postgraduate/documentation/
10	Management of Cultural Information	Ionian University	Department of Archives and Library Science		http://tab.ionio.gr/index.php/en/postgraduates/specialization
11	Archaeology of the Eastern Mediterranean: Greece, Egypt and the Near East	University of the Aegean (UAegean)	Department of Mediterranean Studies		http://dms.aegean.gr/en/graduate-studies/archaeology-of-the-eastern-mediterranean/
12	Cultural Technology and Communication	University of the Aegean (UAegean)	Department of Cultural Technology and Communication		http://www.aegean.gr/postgraduate/%CF%80%CE%BF%CE%BB%CE%B9%CF%84%CE%B9%CF%83%CE%BC%CE%B9%CE%BA%CE%AE-%CF%80%CE%BB%CE%B7%CF%81%CE%BF%CF%86%CE%BF%CF%81%CE%B9%CE%BA%CE%AE-%CE%BA%CE%B1%CE%B9-%CE%B5%CF%80%CE%B9%CE%BA%CE%BF%CE%B9%CE%BD%CF%89%CE%BD%CE%AF%CE%B1
13	Interdisciplinary Approaches in Historical, Archaeological and Anthropological Studies	University of Thessaly	Department of History, Archaeology and Social Anthropology		http://www.ha.uth.gr/index.php?page=post-about
14	Byzantine Studies	University of Ioannina	Department of History & Archaeology		http://www.hist-arch.uoi.gr/index.php?lang=en&itemid=558
15	Modern and Contemporary Greek Society: History – Folk Culture	University of Ioannina	Department of History & Archaeology		http://www.hist-arch.uoi.gr/index.php?option=com_content&view=article&id=104&Itemid=560&lang=en
16	Ancient World: History and Archaeology	University of Ioannina	Department of History & Archaeology		http://www.hist-arch.uoi.gr/index.php?lang=en
17	Ancient Mediterranean World - History and Archaeology	University of Crete	Department of History & Archaeology		http://www.history-archaeology.uoc.gr/en/graduate-studies/programs-of-post-graduate-studies/ancient-mediterranean-world-history-and-archaeology/
18	Byzantine and Medieval Studies	University of Crete	Department of History & Archaeology		http://www.history-archaeology.uoc.gr/en/graduate-studies/programs-of-post-graduate-studies/byzantine-and-medieval-studies/
19	M.A. Program in Ottoman History	University of Crete	Department of History & Archaeology	In collaboration with the Institute for Mediterranean Studies of the Foundation for Research and Technology-Hellas, taught in English	http://www.history-archaeology.uoc.gr/en/graduate-studies/programs-of-post-graduate-studies/joint-english-language-m-a-program-in-ottoman/

			Antiquities and Works of Art		conservation.uniwa.gr/to-tmima-syntirisis
30	MA in Heritage Management	Athens University of Economics and Business (AUEB)		Interdisciplinary , in collaboration with the University of Kent	https://www.dept.aueb.gr/en/dmst/content/ma-heritage-management
Colour code explanation					
Invasive studies			Non-invasive studies		

3.1.1 Analysis of selected postgraduate Heritage studies in Greece.

No	Title	Institution-School Department	Website	ECTS
25	PROTECTION, CONSERVATION AND RESTORATION OF ARCHITECTURAL MONUMENTS (c1998)	AUTH	https://architecture.web.auth.gr/en/postgraduate-studies-2/studies-on-preservation-and-restoration-of-cultural-monuments/	90
Syllabus	SEMESTER	COURSES	http://prosynapo.web.auth.gr/files/%CE%91%CE%84%20%20%20%20%CE%9F%20%CE%94%20%CE%97%20%CE%93%20%CE%9F%20%CE%A3%20%20%20%202018-20.pdf	
		COMPULSORY THEORY COURSES		TOTAL 17,0
		(*)THEORY AND HISTORY OF PROTECTION, CONSERVATION & RESTORATION OF MONUMENTS & ARTIFACTS.		2,5
		(*)HISTORY AND PHILOSOPHY OF ART.		2,0
		(*)HISTORICAL CONSTRUCTION MATERIALS PATHOLOGY & TECHNOLOGY OF CONSERVATION & RESTORATION.		2,5
		(*)HISTORY OF ARCHITECTURE & DEVELOPMENT OF SETTLEMENTS AND TOWNS.		2,0
		CONSTRUCTION TECHNOLOGY OF HISTORICAL BUILDINGS.		2,0
		ISSUES OF BUILDING CONSTRUCTION AND BUILDING PHYSICS IN OLD AND HISTORICAL BUILDINGS. PATHOLOGY AND RESTORATION INTERVENTIONS.		2,5
		METHODS OF SURVEYING MONUMENTS, HISTORICAL AREAS AND WORK OF ARTS.		2,0
		ANALYSIS, DOCUMENTATION OF MONUMENTS & HISTORICAL AREAS.		2,0
		COMPULSORY LABS (LABORATORY INTERDISCIPLINARY COLLABORATION)		TOTAL 9,0
		RESTORATION & REUSE OF HISTORICAL BUILDINGS & ENSEMBLES.		9,0
		ELECTIVE COURSES		TOTAL 4,0
		PATHOLOGY, PROTECTION AND STONE CONSERVATION TECHNIQUES.		2,0
		(*)ESTABLISHING MUSEOLOGICAL FUNCTIONS IN HISTORICAL BUILDINGS AND SITES.		2,0
		FIRE PROTECTION FOR THE HISTORICAL BUILDINGS AND COMPLEXES.		2,0
	1 ST			

		PHOTOGRAMMETRY, GIS, AND PHOTO-INTERPRETATION, REMOTE SENSING IN THE STUDY OF MONUMENTS AND HISTORICAL CENTRES.	2,0
		PHOTOGRAMMETRY, 3D SCANNING TECHNOLOGY AND SPACE INFORMATION SYSTEMS FOR THE DOCUMENTATION OF EXISTING MONUMENTS.	2,0
		RURAL SURVEYING OF ARCHITECTURAL MONUMENTS.	2,0
		PROTECTION, PRESERVATION AND ENHANCEMENT OF URBAN HISTORIC SITES.	2,0
	2 ^D	COMPULSORY THEORY COURSES	TOTAL 7,0
		LAW, LEGISLATION & INSTITUTIONAL ROLES IN THE PROTECTION OF MONUMENTS & WORKS OF ARTS.	2,0
		STATIC & SEISMIC BEHAVIOUR OF HISTORICAL CONSTRUCTIONS. PATHOLOGY OF STATIC SYSTEM.	2,5
		FOUNDATIONS OF HISTORICAL BUILDINGS. PATHOLOGY OF HISTORICAL CONSTRUCTIONS CAUSED BY GROUND & FOUNDATIONS. METHODS & TECHNIQUES OF REPAIR & REINFORCEMENT.	2,5
		COMPULSORY LABS (LABORATORY INTERDISCIPLINARY COLLABORATION)	TOTAL 9,0
		RESTORATION, ANASTYLOSIS, & REUSE OF HISTORICAL BUILDINGS & ENSEMBLES.	9,0
		ELECTIVE COURSES	TOTAL 14,0
		WOOD & WOODEN CONSTRUCTIONS. PATHOLOGY, PROTECTION AND CONSERVATION TECHNIQUES.	2,0
		EXCAVATION TECHNIQUES.	2,0
		EXPLOITATION & PROJECTION OF THE MONUMENTS OF CIVILIZATION – MULTIMEDIA.	2,0
		TECHNOLOGY OF THE CERAMIC CONSTRUCTION MATERIALS.	2,0
		SCIENCE & TECHNOLOGY OF THE MORTAR USING LIME AS BASE.	2,0
		MODERN MATERIALS & CONSERVATION TECHNIQUES.	2,0
		IMPLEMENTATION PROBLEMS OF THE HYDRAULICS AND MECHANICAL STRUCTURES AT MONUMENTS AND HISTORICAL BUILDINGS.	2,0
		SPECIAL PROBLEMS CONCERNING THE CONSTRUCTION OF HISTORICAL BUILDINGS.	2,0

		DEFINITION AND LONG-TIME OBSERVATION OF THE DISFIGURATIONS AT HISTORICAL BUILDINGS AND THEIR SURROUNDINGS.		2,0
		THE COLOUR IN CULTURAL MONUMENTS AND MODERN ART.		2,0
		HISTORICAL TECHNIQUES OF NATURAL LIGHTING IN INTERIOR SPACES & MONUMENTS.		2,0
		GEOTECHNICAL & GEOARCHAEOLOGICAL SUBJECTS.		2,0
		METHODS OF STATIC AND DYNAMIC ANALYSIS OF HISTORICAL CONSTRUCTIONS.		2,0
		MASONRY ENGINEERING.		2,0
		INTERVENTION TECHNOLOGY IN THE STATIC SYSTEM OF HISTORICAL CONSTRUCTIONS AND THEIR STRUCTURAL DESIGN. STONE BRIDGES.		2,0
		INDUSTRIAL HERITAGE.		2,0
		SUSTAINABLE DEVELOPMENT, TOWN PLANNING AND PROTECTION OF NATURAL AND CULTURAL HERITAGE.		2,0
		THE ARCHITECTURE OF INTEGRATION: ISSUES OF THEORY & PRACTICE.		2,0
	3 ^D	FIELDWORK EXPERIENCE & GRADUATION THESIS		30
Curriculum	<p>“THE SPECIFIC AIMS OF THE DIRECTION ARE THE PROVISION OF SPECIAL TRAINING, COMPLEMENTARY TO DEGREE STUDIES, AND OF SPECIALIST KNOWLEDGE OF BOTH THERORETICALAND PRACTICAL NATURE, FOR:</p> <ul style="list-style-type: none"> ○ THE STUDY, CONSERVATION, RESTORATION AND REBUILDING OF ARCHITECTURAL MONUMENTS AND AREAS OF ARCHAEOLOGICAL SITES ○ THE PROTECTION AND RESTORATION OF TRADITIONAL DWELLINGS, HISTORIC TOWN CENTRES, HISTORIC PLACES AND PLACES OF OUTSTANDING BEAUTY” 			
Course content	1ST SEMESTER			
	STUDENTS DEAL WITH THEORIES & TERMINOLOGY, METHODOLOGY & PHILOSOPHY OF CONSERVATION, THE SURVEY OF ARCHITECTURAL MONUMENTS AND STRUCTURES, AND THE PRACTICE OF CONSERVATION (AN INTRODUCTION TO THE VARIOUS WAYS OF INTERVENTIONS).			
	2^D SEMESTER			
	STUDENTS DEAL WITH SPECIAL TOPICS, IN THEORY, PRACTICE AND TECHNOLOGY OF CONSERVATION & RESTORATION, PROTECTION OF ENVIRONMENT AND HISTORICAL CENTRES.			
Teaching methodologies	<ul style="list-style-type: none"> ○ LECTURES ○ LABORATORY WORK ○ SEMINARS/CONFERENCES ○ WORKSHOPS/EDUCATIONAL TRIPS/ FIELDWORK EXPERIENCE ○ APPLIED RESEARCH (EG.CONTACTING WITH INSTITUTES & RESEARCH CENTERS IN GREECE & ABROAD) 			

	<ul style="list-style-type: none"> ○ INTERDISCIPLINARY GROUPS OF STUDENTS
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK/FIELD TRIPS ○ NOTES-BIBLIOGRAPHY
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ LABORATORY OF BUILDING MATERIALS ○ ICT CLASS
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ FINAL THESIS
Staff	MEMBERS OF THE 6 DEPARTMENTS IN COLLABORATION
Credits	90ECTS
Admission	<p>CREDITS POINTS ALLOCATION (IN A RANGE OF 100)</p> <p>A STAGE</p> <ol style="list-style-type: none"> 1. GRADE OF GRADUATE STUDIES (MAX 35 CREDITS) 2. RELEVANCE OF GRADUATE STUDIES (MAX 10 CREDITS) 3. RESEARCH (MAX 10 CREDITS) 4. RELEVANCE OF WORK EXPERIENCE (MAX 12 CREDITS) 5. PUBLICATIONS (MAX 11 CREDITS) 6. OTHER (POST) GRADUATE STUDIES (MAX 10 CREDITS) 7. COVER LETTERS (MAX 6 CREDITS) 8. CERTIFIED KNOWLEDGE OF ENGLISH OR OTHER LANGUAGES (MAX 6 CREDITS) <p>B STAGE</p> <p>ORAL INTERVIEW</p>
Notes	<p>Departments participating in the Program of Postgraduate Studies</p> <p>Six Schools of the Faculty of Engineering of the Aristotle University of Thessaloniki participate in the Program</p> <p>School of Architecture, School of Civil Engineering, School of Rural and Surveying Engineering, School of Mechanical Engineering</p> <p>School of Electrical and Computer Engineering, School of Chemical Engineering</p> <p>The Program is managed by: School of Architecture</p>

No	Title		Institution-School Department	Website	ECTS
7	Protection of Monuments, Direction A: PROTECTION, CONSERVATION AND RESTORATION OF ARCHITECTURAL MONUMENTS (c1998)		NTUA/ School of Architecture	http://courses.arch.ntua.gr/117924.html	TOTAL 90
Syllabus	SEMESTER				
	1 ST	COMPULSORY THEORY COURSES			
		Introduction to the pathology and restoration of monuments and materials			
		Theory and history of restorations			
		Legislation, Institutions and Monuments Management			
		Methodology of Monuments analysis and documentation			
		Protection, Design and Management of historic buildings, ensembles and landscapes			
		Conservation, reinforcement and restoration techniques			
		COMPULSORY LABS (LABORATORY INTERDISCIPLINARY COLLABORATION			
		Monuments survey and Documentation			
		Monuments Conservation and Protection Questions.			
		Restoration theory and Criticism			
		Contemporary architectural design in Urban Environments			
		Urban scale Protection and Conservation of Historical Centers or Settlements			
		ELECTIVE COURSES			
		<u>Industrial heritage.. Preservation and reuse</u>			
		Special issues of archaeological research			

		Special issues of geometrical documentation of monuments		
		Special issues of deepening the protection of monuments		
		Specialized Building Structure Course		
		Methodology of Digital Documentation		
		Monuments and museums - museology issues		
	2 ^o	COMPULSORY THEORY COURSES		
		COMPULSORY LABS (LABORATORY INTERDISCIPLINARY COLLABORATION)		
		ELECTIVE COURSES		
	3 ^o	FIELD WORK EXPERIENCE & GRADUATION THESIS		
Curriculum	<p>The School of Architects organizes the Interdisciplinary Postgraduate Program (MSc) "Monument Protection" with the following directions: (a) Maintenance and Restoration of Historic Buildings and Sets; and (b). Maintenance Materials and Interventions</p> <p>The program is organized by the School of Architecture in collaboration with the School of Chemical Engineering, and with the participation of the School of Civil Engineering and Rural Surveying Engineers of NTUA. The direction is (a) coordinated by the School of Architectural Engineering and (b) the School of Chemical Engineering.</p> <p>The First Direction of the "Conservation and Restoration of Historic Buildings and Sites" program aims to educate and train scientists to document, protect and preserve our Architectural Heritage, and in particular for monuments of all periods, for the reconstruction of tradition and later on buildings and art works. of great importance.</p> <p>Also, in order to provide the knowledge needed to substantiate the particular profile of historic cities and settlements, to treat them as living and evolving organisms - always in conjunction with their natural environment - to highlight their problems and "integrated" protection methodology which includes the concept of sustainable development.</p>			
	Course content	1 ST SEMESTER		
		STUDENTS DEAL WITH THEORIES & TERMINOLOGY, METHODOLOGY & PHILOSOPHY OF CONSERVATION, THE SURVEY OF ARCHITECTURAL MONUMENTS AND STRUCTURES, AND THE PRACTICE OF CONSERVATION (AN INTRODUCTION TO THE VARIOUS WAYS OF INTERVENTIONS).		
		2 ^o SEMESTER		

	STUDENTS DEAL WITH SPECIAL TOPICS IN THEORY, PRACTICE AND TECHNOLOGY OF CONSERVATION & RESTORATION, PROTECTION OF ENVIRONMENT AND HISTORICAL CENTRES.
Teaching methodologies	<ul style="list-style-type: none"> ○ LECTURES ○ LABORATORY WORK ○ SEMINARS/CONFERENCES ○ WORKSHOPS/EDUCATIONAL TRIPS/ FIELDWORK EXPERIENCE ○ APPLIED RESEARCH (EG.CONTACTING WITH INSTITUTES & RESEARCH CENTERS IN GREECE & ABROAD) ○ INTERDISCIPLINARY GROUPS OF STUDENTS
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK/FIELDTRIPS ○ NOTES-BIBLIOGRAPHY
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ LABORATORY OF BUILDING MATERIALS ○ ICT CLASS
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ FINAL THESIS
Staff	MEMBERS OF THE 6 DEPARTMENTS IN COLLABORATION
Credits	90ECTS
Admission	<p>CREDITS POINTS ALLOCATION (IN A RANGE OF 100)</p> <p>A STAGE</p> <ul style="list-style-type: none"> 9. GRADE OF GRADUATE STUDIES (MAX 35 CREDITS) 10. RELEVANCE OF GRADUATE STUDIES (MAX 10 CREDITS) 11. RESEARCH (MAX 10 CREDITS) 12. RELEVANCE OF WORK EXPERIENCE (MAX 12 CREDITS) 13. PUBLICATIONS (MAX 11 CREDITS) 14. OTHER (POST) GRADUATE STUDIES (MAX 10 CREDITS) 15. COVER LETTERS (MAX 6 CREDITS) 16. CERTIFIED KNOWLEDGE OF ENGLISH OR OTHER LANGUAGES (MAX 6 CREDITS)

	B STAGE ORAL INTERVIEW
Notes	<p>Departments participating in the Program of Postgraduate Studies Six Schools of the Faculty of Engineering of the Aristotle University of Thessaloniki participate in the Program School of Architecture, School of Civil Engineering, School of Rural and Surveying Engineering, School of Mechanical Engineering School of Electrical and Computer Engineering, School of Chemical Engineering The Program is managed by: School of Architecture</p>

No	Title	Institution-School Department	Website	Category
8	Protection of Monuments, Direction B: Conservation of building materials	National Technical University of Athens, School of Architecture (course leader) School of Chemical Engineering (Direction B leader) School of Civil Engineering School of Rural and Surveying Engineering	http://laertis.cemeng.ntua.gr/dpms_syvtmr/nsn/desc.htm	Master of Science
Syllabus	<p>1. Introductory courses (same as direction A):</p> <p>1.1. Theory and history of conservation</p> <p>1.2. Introduction in the pathology and conservation of monuments and materials</p> <p>1.3. Legislation and regulations of cultural heritage</p> <p>2. Core subject courses:</p> <p>2.1. Science and technology of structural materials and architectural surfaces</p> <p>2.2. Science and technology of conservation materials and methods of conservation-restoration-protection</p> <p>2.3 Environmental management for the protection of monuments</p> <p>3. Selection courses (3 out of 8):</p> <p>3.1 Corrosion and conservation of metallic works and structures</p> <p>3.2 Specialized techniques of materials and conservation interventions for the protection of monuments, with emphasis to antiseismic protection of monuments</p> <p>3.3 Pilot conservation treatments of monuments</p> <p>3.4 Specialized subjects of environmental control for the protection of monuments and sites</p> <p>3.5 Specialized subjects of environmental control for the protection of museum collections</p> <p>3.6 Specialized technologies and techniques for the conservation and protection of cultural heritage works</p> <p>3.7 Archaeometry</p> <p>3.8 Multidisciplinary documentation, diagnosis, rehabilitation and protection of cultural heritage towards sustainability</p> <p>3.9 (common with direction A) Specialized subjects of geometric documentation</p> <p>4. Laboratory courses:</p> <p>4.1. Diagnostic techniques and methods</p> <p>4.2 Cleaning methods and techniques in the laboratory scale and the scale of buildings/monuments</p> <p>4.3 Consolidation methods and techniques in the laboratory scale and the scale of buildings/monuments</p> <p>4.4. Study of structural materials in response to humidity phenomena</p> <p>4.5. Characterization of historical mortars</p> <p>4.6. Characterization and composition of conservation mortars</p> <p>4.7. Static and dynamic behaviour of structures</p> <p>4.8. Management of environmental- monument data</p> <p>4.B Field trips, technical visits</p> <p>5. Final dissertation</p>			

Curriculum	<p>The program is 2 years duration, full-time, taught with physical presence at the University (Zografou Campus NTUA, Athens). All lectures are mandatory for the completion of the course (90% of lectures, 100% of laboratory work).</p> <p>During the first semester, taught lectures of subject 1 courses, 2nd Semester: core subject 2 courses, 3rd semester: Selection subject 3 courses and Laboratory subject 4 courses, 4th Semester: final dissertation.</p> <p>Field trips and technical visits are conducted in parallel to the courses. Specialised seminars and lectures are also part of the program.</p> <p>The curriculum includes lectures, seminars and tutorials carried out individually in parallel with the equivalent lectures. Additionally, students must carry out laboratory work and an individual dissertation. The active involvement in research is considered an integral part of the studies. The whole program includes core lectures and seminars, on Historical review of conservation theory and philosophy, historic structure techniques, recording and surveying methods, evaluation criteria, etc, pathology of monuments and building materials, deterioration causes, environmental impact assessment, conservation and restoration techniques, selecting materials strategy, earthquake protection, urban conservation and sustainable development, protecting the landscape and natural environment, regional planning and architectural heritage, new architectural interventions in historic entities, international and Greek legislation and regulations, European Union and cultural heritage.</p>
Course content	<p>1. Introductory courses :</p> <p>1.1. Theory and history of conservation and restoration History of conservation and restoration, Principles, ideology and philosophy of conservation and restoration. Theoretical approach. International charters and declarations. Current approach. Problems and practices.</p> <p>1.2. Introduction in the pathology and conservation and restoration of monuments and materials Phenomena and causes of degradation and pathology of monuments. Structural materials of historic buildings and monuments: Attributes, degradation and protection. Methodology and techniques of diagnosis. Conservation methods and materials. Criteria and strategic planning of conservation interventions.</p> <p>1.3. Legislation and regulations of cultural heritage Legislation and regulations for the protection of cultural heritage. Competent bodies- European Union and Cultural Heritage. The role of International Institutions</p> <p>2. Core subject courses:</p> <p>2.1. Science and technology of structural materials and architectural surfaces Properties of structural materials. /Assessment of the degradation susceptibility. Phenomena and mechanisms of degradation in correlation with inward and outward parameters. Laboratory, on-site and non-destructive methods. The methodology of diagnosis, characterization and mapping of structural materials and degradation. Evaluation of environmental parameters.</p> <p>2.2. Science and technology of conservation materials and methods of conservation-restoration-protection New technologies and ethics in the restoration and protection of monuments. Criteria of choice of materials and conservation planning. Advanced and composite materials- nanomaterials. Standards and norms. Methods of evaluation of the compatibility and effectiveness of conservation methods and materials. Strategic planning.</p> <p>2.3 Environmental management for the protection of monuments Prevention of degradation via monitoring, control and evaluation of environmental parameters and causes of damage. Computing and geoinformation applications for the preservation of Cultural Heritage. Management of environmental parameters for the reduction of risk damage. Management of mapping and geoinformation systems. Context, methodology and techniques.</p>

	<p>Sustainable constructions. The role of the materials. Quality control of constructions, standards, tests.</p> <p>3. Selection subjects (3 out of 8):</p> <p>3.1 Corrosion and conservation of metallic works and structures Corrosion and protection of metals. The effects of acid rain, carbonation of concrete, marine and atmospheric environment. Protection of metals. Methodology, materials and techniques of intervention. Examples and applications.</p> <p>3.2 Specialized techniques of materials and conservation interventions for the protection of monuments, with emphasis to antiseismic protection of monuments Problems of historic materials and constructions from earthquake damage. Examination and standardization of conservation materials for the anti-seismic protection of monuments in correlation with criteria and methods of planning and rehabilitation of monuments, experimental methods. Pilot intervention in Ayia Sophia Constantinople.</p> <p>3.3 Pilot conservation treatments of monuments Problems of compatibility of materials and conservation interventions in characteristic monuments and entities. Pilot conservation and restoration interventions (Monuments of the Acropolis of Athens, Medieval city of Rhodes, Venice, Holy Sepulture Jerusalem etc.) Historic mortars and plasters. Problems of evaluation and criteria for restoration mortars. The application of lasers in cultural heritage. Conservation of wooden structural elements in historic buildings and monuments.</p> <p>3.4 Specialized subjects of environmental control for the protection of monuments and sites Specialized subjects of environmental management for the protection of monuments and sites-European strategic of environmental management and development. The city of tomorrow and cultural heritage. Environmental management for the protection of monuments, historic cities and traditional settlements. Archaeologic parks. General guidelines of study and planning. Conservation and rehabilitation of industrial heritage.</p> <p>3.5 Specialized subjects of environmental control for the protection of museum collections Mechanisms and methodologies of study. Effects of atmospheric pollutants on museum exhibits. Directions, criteria and methodology of environmental management in correlation with museological management. Compatibility and fluctuations. Applications.</p> <p>3.6 Specialized technologies and techniques for the conservation and protection of cultural heritage works Methods of revelation, diagnosis and conservation of architectural surfaces (wall paintings, murals, mosaics etc). Study of degradation, planning of conservation interventions and materials of archives, in correlation with the environmental conditions of their storage systems. Special technologies of conservation and protection. Lasers in the conservation of works of art. Conservation of wooden structural elements in historic buildings and monuments.</p> <p>3.7 Archaeometry Problems and methods of archaeometry- applications. Absolute chronology, analytical methods on works of art and archaeological materials. Current technical methods of the archaeological environment with emphasis in geophysical methods, photogrammetry, computing methods etc, aiming to gather information regarding its use and recomposition.</p> <p>3.8 Multidisciplinary documentation, diagnosis, rehabilitation and protection of cultural heritage towards sustainability Mechanisms of equilibrium which lead to degradation of cultural heritage. Interventions directed to the creation of new equilibrium leading to sustainability.</p> <p>3.9 (common with direction A) Specialized subjects of geometric documentation</p> <p>4. Laboratory courses:</p> <p>4.1. Diagnostic techniques and methods</p> <p>4.2 Cleaning methods and techniques in the laboratory scale and the scale of buildings/monuments</p>
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	4.3 Consolidation methods and techniques in the laboratory scale and the scale of buildings/monuments 4.4. Study of structural materials in response to humidity phenomena 4.5. Characterization of historical mortars 4.6. Characterization and composition of conservation mortars 4.7. Static and dynamic behaviour of structures 4.8. Management of environmental- monument data 4.B Field trips to monuments, technical visits to ongoing conservation projects, on-site applications of methods 5. Final dissertation
Teaching methodologies	Lectures and seminars, visits to monuments, laboratory work and on-site applications of methods.
Teaching materials	Distribution of lectures and additional material in electronic form.
Class infrastructure	Classroom with projector, computer laboratory, laboratories of chemical, analytical and experimental methods, library, wi-fi connection, VPN
Evaluation methods	Written exams, reports and oral presentations. Final dissertation in written form and presentation.
Staff	1 program leader 1 administration support 5 or more professors More than 10 visiting lecturers
Credits	
Admission	Graduates of Master integrated degree or Bachelor, with priority given to Architecture, Chemical Engineering, Civil Engineering, Rural and Surveying Engineering. Other degree subjects that are accepted on second priority: Chemistry, the technology of materials, archaeology, conservation, museum management. Up to 15 students are accepted, 10 of priority degrees, 5 of 2 nd . Applications every two years with cv, degrees, knowledge of at least one foreign language, two recommendation letters. Successful admission is evaluated through examinations conducted every two years, followed by an interview.
Notes	

No	Title	Institution-School Department	Website
1	Monument Management: Archaeology, City and Architecture	National and Kapodistrian University of Athens/ Department of History & Archaeology	http://www.dpmsdiarch.uoa.gr/
Syllabus	<p>Mandatory Courses</p> <ol style="list-style-type: none"> 1. <u>Management of Monuments I</u>: Issues related to the management of monuments, archaeological sites and historical sites are examined from the perspective of a project manager. 2. <u>Management of Monuments II</u>: Issues of financial management, monument operation, legal and development parameters. <p>Elective Courses are divided in three major categories:</p> <p>a) Archaeology, Theoretical Approaches to Tangible Culture:</p> <ol style="list-style-type: none"> 1. <u>Archaeology, Theoretical Approaches to Tangible Culture I</u>: Archaeology, Architecture, Town Planning and Theoretical Approaches to the Material Culture of Antiquity. 2. <u>Archaeology, Theoretical Approaches to Tangible Culture II</u>: Archaeology, Architecture, Town Planning and Theoretical Approaches to the Material Culture of the Byzantine, Medieval and Post-Byzantine Periods. 3. <u>Archaeology, Theoretical Approaches to Tangible Culture III</u>: Archaeology, Architecture, Planning and Theoretical Approaches to the Material Culture of the Modern era. 4. <u>Special Topics in Archaeology, Theoretical Approaches to Material Culture</u> <p>b) Architecture and management of sites and monuments:</p> <ol style="list-style-type: none"> 1. <u>Architecture and management of sites and monuments I</u>: Issues of conservation, restoration and management of ancient monuments and related archaeological sites. 2. <u>Architecture and management of sites and monuments II</u>: Issues of maintenance, restoration and management of Byzantine, Medieval and Post-Byzantine monuments and related archaeological sites. 3. <u>Architecture and management of sites and monuments III</u>: Issues on maintenance, restoration and management of newer and modern monuments and urban complexes 4. <u>Special Topics in Architecture and management of sites and monuments.</u> <p>c) Digital cultural management and new technologies</p> <ol style="list-style-type: none"> 1. <u>Digital Cultural management and new Technologies I</u>: Cultural communication and technology issues. 2. <u>Digital Cultural management and new Technologies II</u>: Cultural management and sociological issues related to culture. 3. <u>Digital Cultural management and new Technologies III</u>: Issues of cultural management and exploitation of new technologies related to sustainable development. 4. <u>Special Topics in Digital Cultural management and new Technologies</u> 		

Curriculum	<p>The purpose of this postgraduate program is to provide a high-level postgraduate education in the scientific field of monument management.</p> <p>The MSc begins in the winter semester of each academic year and lasts for 4 academic semesters.</p> <p>The Master of Science (MSc) consists of the following four units:</p> <ol style="list-style-type: none"> 1. postgraduate courses 2. design projects 3. interdisciplinary seminar and 4. postgraduate thesis/dissertation
Teaching methodologies	<p>The lessons require physical attendance of the students. Teaching by distance education can be done in exceptional cases.</p> <ul style="list-style-type: none"> - Lectures - Design studios - Summer school/ workshops - interdisciplinary seminar
Teaching materials	
Class infrastructure	classrooms, auditoriums equipped with audio-visual media and laboratories
Evaluation methods	<p>Attendance at courses/workshops is mandatory.</p> <p>Postgraduate students' evaluation is carried out at the end of each semester by written or oral examinations or by the preparation of reports throughout the semester.</p> <p>The method of assessment is determined by the teacher of each course. The grading is on a scale of 1-10.</p>
Staff	
Credits	<p>Total: 120 ECTS to obtain a MSc diploma</p> <p>30 ECTS/ semester:</p> <p>(a) Seven (7) Postgraduate Courses: two (2) compulsory in the first two semesters (from 12 ECTS) and five elective courses [two in the first, two in the second and one in the third semester, with at least one course required by each subject: $5 \times 6 = 30$ ECTS (elective courses)]</p> <p>(b) Two (2) Design Projects, one in the third and one in the fourth semester: $6 \times 2 = 12$ ECTS</p> <p>(c) Attendance at the Interdisciplinary Seminar, which runs throughout the MSc (in all four semesters, 6 ECTS per semester): $6 \times 4 = 24$ ECTS</p> <p>(d) Postgraduate Thesis: 12 ECTS in the third semester and 18 ECTS the fourth semester = 30 ECTS</p>
Admission	<p>Admission of twenty (20) students per academic year.</p> <p>Selection of admissions is based on the following criteria:</p> <ul style="list-style-type: none"> - Final grade of Undergraduate Degree 5%. - Diploma thesis grade 5%. - Certified knowledge of English or other language (C2) 5%. - Possession of more than 1 Undergraduate or postgraduate Degree 5% - research activity/ Publications 5%. - Letters of recommendation 5% - - Oral interview and examination at 30%. - 35% written entrance exam for the MSc
Notes	Interdisciplinary Master's Program, in collaboration with the University of Patra, Department of Architecture and the University of the Aegean, Department of Cultural Technology.

3.2 Sample list and analysis of selected postgraduate Heritage studies in Europe.

No	Postgraduate Course title	University/ Department	Country	Notes	Link
1	MSc Sustainable Building Conservation	Cardiff University/ Welsh School of Architecture	United Kingdom		https://www.cardiff.ac.uk/study/postgraduate/taught/courses/course/sustainable-building-conservation-msc
2	MSc Conservation of Historic Buildings	University of Bath/ Department of Architecture & Civil Engineering	United Kingdom		https://www.bath.ac.uk/courses/postgraduate-2020/taught-postgraduate-courses/msc-conservation-of-historic-buildings/
3	MA History of Art (Architectural History and Theory)	University of York	United Kingdom		https://www.york.ac.uk/study/postgraduate/taught/courses/ma-history-of-art-architectural/
4	MSc Architectural Conservation	University of Edinburgh/ School of Architecture and Landscape Architecture	United Kingdom		https://www.eca.ed.ac.uk/study/postgraduate/architectural-conservation-msc
5	Master in Conservation of Cultural Heritage	University of Lincoln	United Kingdom		https://www.lincoln.ac.uk/home/course/conhisma/
6	MSc Architectural Conservation	University of Kent/ School of Architecture	United Kingdom		
7	Master's Degree in Conservation and Restoration of Cultural Heritage	University of Valencia (UPV)/ Department of Conservation and Restoration of Cultural Heritage	Spain		http://www.upv.es/titulaciones/MUCRBC/info/masinformacioni.html
8	Masters in Structural Analysis of Monuments and Historical Constructions	Polytechnic University of Barcelona	Spain		http://www.msc-sahc.org/
9	Master in the restoration of architectural monuments	Universitat Politècnica de Catalunya BARCELONATECH/ School of professional	Spain		https://www.talent.upc.edu/ing/estudios/formacio/curs/253100/master-restauracion-monumentos-arquitectura/

		and executive development			
10	Master in Diagnosis of the State of Preservation of the Historical Heritage	Universidad Pablo de Olavide sevilla/ Centro de Estudios de Postgrado CEDEP	Spain		http://www.upo.es/postgrado/en/Master-Diagnosis-of-the-State-of-Preservation-of-the-Historical-Heritage
11	Master in the conservation of cultural heritage	Universidad Complutense de Madrid/ Fine arts Faculty (UCM)	Spain		https://www.ucm.es/masterconservacion/descripcion-del-titulo
12	Master's Degree in Conservation Science and Technology for Cultural Heritage	Ca' Foscari University of Venice	Italy		https://www.unive.it/pag/20732/
13	Master's Program in Science and Technology for the Conservation of Cultural Heritage	Sapienza University of Rome	Italy		https://corsidilaura.uniroma1.it/en/corso/2019/29846/home
14	Master's in science for the Conservation-Restoration of Cultural Heritage	University of Bologna/ Campus di Ravenna	Italy		https://corsi.unibo.it/2cycle/ScienceForConservation/overview
15	Master of Conservation of Monuments and Sites (Leuven)	University KU Leuven	Belgium		https://onderwijsaanbod.kuleuven.be/opleidingen/e/CQ_52688406.htm#activetab=diploma_omschrijving
16	Master in Restoration and Conservation	University of Dubrovnik,	Croatia		http://www.unidu.hr/datoteke/636izb/restauracija.pdf
17	Specialization and Deepening Diploma (DSA) with Architecture and Heritage	Ecole de Chaillot	France		https://www.citedelarchitecture.fr/sites/default/files/documents/2019-10/nouveau_programme_pedagogique_dsa_2019_-_2021_octobre_2019.pdf

No	Title	Institution- School Department	Website
1	MSc Sustainable Building Conservation	Cardiff University/ Welsh School of Architecture	https://www.cardiff.ac.uk/study/postgraduate/taught/courses/course/sustainable-building-conservation-msc
Curriculum	<p>The course's curriculum is divided in 6 distinct Modules:</p> <p>Module 1: The Conservator's Role (ART501)</p> <p>Module 2: Tools of Interpretation (ART502)</p> <p>Module 3: Design tools. Energy use in historic buildings (ART503)</p> <p>Module 4: Case studies and regional work (ART504)</p> <p>Module 5: Design tools, methods of repair (ART505)</p> <p>Module 6: Dissertation</p> <p>Course duration: 1 full year</p>		
Syllabus	<p>https://www.cardiff.ac.uk/study/postgraduate/taught/courses/course/sustainable-building-conservation-msc</p> <p><u>Module 1: The Conservator's Role (ART501)</u></p> <p>This module sets out to establish and question the understanding of the role of the built heritage sector at a global and a local level. It introduces both economic and ethical dilemmas that present constant challenges to the theory and practice of building conservation.</p> <p>Topics covered:</p> <ul style="list-style-type: none"> - History & theory of conservation - Comparative philosophies of conservation - Ethics & dilemmas of conservation: designations, multiple significances - Economic dilemmas: world heritage people buildings, tourism - History and hierarchy of the Conservation Movement, UNESCO, Global and Local frameworks - Marketing heritage: proving the value of identity - Participating in global professional networks <p><u>Module 2: Tools of Interpretation (ART502)</u></p> <p>This module addresses methods for both desk-based research and on-site surveys into and of historic buildings. It encourages the development of interpretive skills using both methods to form assertions about the nature, durability and date of historic buildings.</p> <p>Topics covered:</p> <ul style="list-style-type: none"> - Researching historic buildings: desk-top analysis - Techniques of recording and measurement: on-site analysis - Detailed assessment: identifying the vernacular, patterns and trends vs universal standards. - Building pathology: damp, rot, decay, breathability, membranes and repair - Intervention and Maintenance: technical dilemmas, consultation and finding specialists - <p><u>Module 3: Design tools. Energy use in historic buildings (ART503)</u></p> <p>This module addresses complex challenges posed by calls for reduced energy demand within historic buildings. Potential upgrades can challenge the defence of heritage value against future energy performance.</p> <p>Topics covered:</p> <ul style="list-style-type: none"> - Introduction to basic concepts of building physics 		

	<ul style="list-style-type: none"> - Installation and assessment of services in an existing building - Renewable energy and historic buildings - Traditional and low carbon materials relevant to thermal upgrades of historic buildings - Monitoring and analysis of environmental comfort and energy use - Whole life cycle costing and analysis - Hygrothermal software and monitoring workshops - Case studies illustrating challenges and pitfalls <p><u>Module 4: Case studies and regional work (ART504)</u> This module sets out to explore the formation of judgements regarding building conservation in practice using case study or regional case study material. The precise subject of each area may vary. Content:</p> <ul style="list-style-type: none"> - Welsh domestic architecture - Religious and institutional architecture - Industrial architecture and landscapes# - Architecture of war: Iron age hillforts, medieval fortifications, WWII monuments <p><u>Module 5: Design tools, methods of repair (ART505)</u> Approach to the repair of building types are taken to address different building elements and methods of construction. Topics covered:</p> <ul style="list-style-type: none"> - Conservation of domestic buildings, their reuse and the insertion of new elements. - Conservation and repair of modernist buildings. - Conservation and repair of historic churches and chapels. - Consternation of historic townscapes. - Conservation Areas - Conservation of landscapes - Conservation and repair of building materials. <p>Module 6: Dissertation</p>
Teaching methodologies	<p>The following teaching methods are employed in the programme. Each module employs a different mix of these methods as is appropriate to the subject matter and the method of assessment.</p> <ul style="list-style-type: none"> - Lectures - Set texts - Case studies - Seminars - Workshops - Course work - Surveying/ measuring - Study visits
Teaching materials	All presentation and lectures are available online, libraries, online databases and resources
Class infrastructure	Classrooms, computer rooms, printing and modelling materials, documentation and measuring equipment, monitoring equipment (thermal cameras etc)
Evaluation methods	Each module is assessed according to its overall mark. An overall mark of 50 or greater is required to pass any module.

	<ul style="list-style-type: none"> - Group tutorials - Student presentations - Report submission - Design projects
Staff	Professor, tutors, external lecturers and professionals
Credits	<p>The programme has 2 academic stages, leading to the award of:</p> <p><u>1)</u> <u>Postgraduate Diploma</u>: 2 semesters for full-time students or 1 year and 2 semesters for 2-year part-time students or 2 years and 2 semesters for 3-year part-time distance students. Consists of taught and project modules to the value of 120 credits.</p> <p><u>2)</u> <u>Master's degree</u>: 1 calendar year for full-time students, or 2 calendar years for part-time students. Consists of taught and project modules to the value of 180 credits and shall include a dissertation of 60 credits.</p> <p>Credits/module</p> <p>Module 1: The Conservator's Role (ART501): 20</p> <p>Module 2: Tools of Interpretation (ART502): 20</p> <p>Module 3: Design tools. Energy use in historic buildings (ART503): 20</p> <p>Module 4: Case studies and regional work (ART504): 40</p> <p>Module 5: Design tools, methods of repair (ART505): 20</p> <p>Module 6: Dissertation: 60</p>
Admission	Applicants must cover the admission criteria of the university, Interview and portfolio
Notes	Possibility for part- time study and distance learning

No	Title	Institution-School Department	Website	ECTS
7	Master's Degree in Conservation and Restoration of Cultural Heritage	UNIVERSIDAD POLYTECNICA DE VALENCIA, SPAIN	http://www .upv.es/titul aciones/MU CRBC/index. html	TOTAL 120(108+12TFM)2 YEARS
Syllabus	COURSES			
1 ST COURSE	MODULE 1: RESEARCH AND MANAGEMENT (30 credits)			
	SUBJECT 1 - Scientific analysis techniques (12 credits)			
	<ul style="list-style-type: none">Analytical chemical study of works of art I (4,5cts)Non-invasive analysis techniques(4,5cts)Principles and techniques associated with identification of the wooden supports(3cts)Microscopy study in inorganic material3cts)			
	SUBJECT 2 - Research methodology (9 credits)			
	<ul style="list-style-type: none">Conservation and Restoration History of Cultural assets(4,5cts)Iconography applied to Conservation and Restoration of Cultural Assets.(4,5cts) Contemporary restoration theory(4,5cts)			
	SUBJECT 3 - Wealth Management (9 credits)			
	<ul style="list-style-type: none">Expertise and evaluation of works of art (4,5cts)Intangible Heritage Management (4,5cts)Transport, storage and exhibition(4,5cts)			
MODULE 2: RESEARCH DISCIPLINES (30 credits)				
SUBJECT 1 - Specific intervention methodologies (30 credits)				
<ul style="list-style-type: none">Conservation of unconventional art(4,5cts)Color in textiles of cultural value.Conservation and treatments(4,5cts)				

	<ul style="list-style-type: none"> • 3D modeling applied to Conservation and • restoration of cultural assets(4,5cts) • Case study of contemporary action in restoration of mural painting(4,5cts) • Ideology and methodology of reintegration(4,5cts) • Digital heritage: art of new media(4,5cts) • Problems and treatments of painting of • easel in special structures(4,5cts) • Specific conservation treatments and • mural painting restoration(4,5cts) • Conservation and restoration of sculpture and • ornaments in organic support(4,5cts) • Specific treatments in restoration of <p>archaeological and ethnological materials(4,5cts)</p>
2^D COURSE	MODULE 1 (30 credits)
	SUBJECT 1 - Scientific analysis techniques (12 credits) <ul style="list-style-type: none"> • Study of the mechanical properties and dimensional of artistic materials(4,5cts) • Analytical Chemical Study of Works of Art II(4,5cts) • The stratigraphic study of heritage(4,5cts) • Chemistry of atmospheric pollutants and their <p>interactions with works of art.(3cts)</p>
	SUBJECT 2 - Research methodology (4.5 credits) <ul style="list-style-type: none"> • Research in C + R (techniques of localization and preparation of scientific documents) (4,5cts) • Instrumental techniques for the development of <p>experimentation(4,5cts)</p>
	SUBJECT 3 - Wealth Management (13.5 credits) <ul style="list-style-type: none"> • From the idea to the project. The innovation head of cultural heritage(4,5cts)

	<ul style="list-style-type: none"> Cataloging systems and methodology <p>artworks(4,5cts)</p> <ul style="list-style-type: none"> Cultural heritage legislation and creation of small companies(4,5cts)
	MODULE 2 (18 credits)
	<p>SUBJECT 1 - Specific intervention methodologies (18 credits)</p> <ul style="list-style-type: none"> Conservation of Photographs(4,5cts) Conservation and restoration of sculpture and plaster ornaments(4,5cts) Conservation and restoration of contemporary mural painting(4,5cts) Conservation and restoration of Archaeological metals(4,5cts) Conservation and extraction of materials archaeological sites(4,5cts) History of colorants and varnishes(4,5cts) Advanced paper restoration techniques: humidification and lamination systems(4,5cts) Conservation and restoration treatments for easel painting on different supports(4,5cts) Stabilization and reinforcement treatments support in painting on board(4,5cts)
	<p>MODULE 3: Master's Thesis</p> <p>Minimum credits: 12 End of Degree Project SUBJECT: End of Master's Project. Credits to take: 12. End of Degree Project. Mandatory character.</p>
Curriculum OBJECTIVES AND	<p>The Master is oriented to research and academic training in the field of the conservation and restoration of mural painting, conservation and restoration of easel painting and altarpieces, conservation and Restoration of sculpture and archaeological materials.</p>

COMPETENCES	
OBJECTIVES	<p>The fundamental objective is to train its graduates at the beginning of the research, professional development and specialization in the field of conservation and restoration of pictorial, sculptural cultural assets, Archaeological, textiles, documentaries, and other objects of heritage interest.</p> <p>The general objectives will be to help the professional understand the essence of the work of art and its historical-aesthetic sense, promoting the need for interdisciplinary work and technical and scientific rigor, increasing the capacity of management of information sources, promoting qualities such as critical capacity and evaluative, capacity for analysis and synthesis, observation and deduction; and form to the postgraduate future in the most essential aspects related to Conservation and restoration of the historical-artistic heritage.</p>
COMPETENCES	<p>Basic Competences</p> <ul style="list-style-type: none"> - Possess and understand knowledge that provides a basis or opportunity of being original in the development and / or application of ideas, often in a context research. - That the students know how to apply the acquired knowledge and their problem solving ability in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study. - That students are able to integrate knowledge and face to the complexity of formulating judgments based on information that, being incomplete or limited, include reflections on social responsibilities and ethics linked to the application of their knowledge and judgments. - That the students know how to communicate their conclusions and knowledge and last reasons that support them to specialized and non-specialized audiences of a clear and unambiguous way. - That students possess the learning skills that allow them continue to study in a way that will be largely self-directed or Autonomous. <p>General Competences</p> <ul style="list-style-type: none"> - Design, direct and evaluate an idea effectively until it becomes a draft. - Work and lead teams effectively to achieve common objectives, contributing to their personal and professional development. <p>Specific Competences</p> <ul style="list-style-type: none"> - Ability to establish guidelines and criteria for intervention in the field of the conservation of cultural assets. - Ability to manage the historical-artistic heritage, determining the necessary actions for its conservation and enjoyment. - Knowledge of the most advanced techniques for conservation and Restoration of cultural assets. - Ability to develop scientific, technical and analytical projects, aimed at preserving the historical-artistic heritage. - Ability to execute current intervention techniques, discriminating and selecting the most necessary
Course content	

Teaching methodologies	obligatory character, lectures and seminars, visits to monuments, laboratory work and on-site applications of methods.
Teaching materials	Distribution of lectures and additional material in electronic form, practical work on cultural heritage materials
Class infrastructure	The CRBC Department has three specific laboratories, a laboratory for Documentation, Photography Laboratory, and Physical-Chemical Laboratory, with the objective of advising and providing the student with academic-teaching information and researcher, where appropriate, necessary during the course and required by its teachers / tutors.
Evaluation methods	Written exams, reports and oral presentations. Final dissertation in written form and presentation.
Admission INCOME PROFILE AND ADMISSION CRITERIA	<p>The training program is aimed at:</p> <ul style="list-style-type: none"> - Spanish and / or foreign graduates in Conservation and Restoration of Assets Cultural. - Spanish and / or foreign graduates in Fine Arts or other Bachelor's degrees University students with specialty and / or intensification in Conservation and Restoration of Cultural Assets. - Spanish and / or foreign graduates in Bachelor's degrees or other degrees related to Conservation and Restoration of Cultural Property, which may access this Master and that the Academic Commission of the Master admits for its Curriculum vitae. <p>The procedure for admission and selection of students will be based on the Degree of Degree or Bachelor.</p> <p>The Academic Committee of the Master will use the following as admission criteria aspects to assess the requests of the students:</p> <ul style="list-style-type: none"> • 1st Degree (taking into account the affinity of the same with the contents of the Master) [70%]. • 2nd Academic Record [15%]. • 3rd Curriculum Vitae [15%]. <p>NUMBER OF PLACES: 35</p>
Notes	

No	Title		Institution-School Department	Website	CFU
13	Science and Technology for the Conservation of Cultural Heritage		Sapienza Università de Roma	https://corsidilaurea.uniroma1.it/en/corso/2018/28702/home	TOTAL 90
Syllabus	SEMESTER	COURSES			
	1 ST	COURSES			
		ARCHAEOOMETRY AND LABORATORY OF ARCHAEOOMETRY			9
		ARCHAEOLOGICAL RESEARCH: METHODS AND CASE STUDIES			9
		Physical Institutions of matter			6
		CHEMISTRY OF CUTURAL HERITAGE AND ELECTROCHEMICAL METHODS			6
		MUSEOLOGY NATURALISTICA			6
		Decay and Colour			6
		THEORY OF ARCHITECTURAL RENOVATION			6
		DECAY AND CONSERVATION OF NON-METALLIC MATERIALS			6
		Archaeological aerotopography and remote sensing			6
		Selection by students			6
		2 ^D	COURSES		
	English Italian for Cultural Heritage			3	
	TECHNIQUES FOR THE CONTROL AND SAFETY OF SITES			6	
	LABORATORY OF RESTORATION AND CONSERVATION CHEMISTRY			6	
	Ore minerals and gemstones: use and provenance			6	
	Laboratory of Museology: cataloguing and multimedia			6	
	Laboratory of Physics for microclimate analysis			6	
	Geochemistry and archeology			6	
	Archaeobotany: laboratory and field work			6	
	3 ^D	COURSES			
		Etruscology and Italic Antiquities			6
		DECAY AND CONSERVATION OF NON-METALLIC MATERIALS			6
		Archaeological aerotopography and remote sensing			6

		Training		3
		Selection by students		12
		Final exams		30
Curriculum	<p>The program is aimed at training researchers and experts in the field of cultural heritage conservation and archaeometry. They will be able to analyze conservation problems and to detect deterioration processes thanks to their knowledge of the physical, chemical and structural properties of materials, as well as to identify any possible remedies. Such experts shall be able to make interventions in observance of the historical, artistic and architectural framework of artifacts, by contributing thus to their enhancement and protection. The learning outcomes of the master's degree in Science and Technology for the Conservation of Cultural Heritage are consistent with the qualifying outcomes of the LM-11 class (Conservation and Restoration of Cultural Heritage). More precisely, master's graduates in Science and Technology for the Conservation of Cultural Heritage are deemed to have attained the following learning outcomes:</p> <ul style="list-style-type: none"> - a mastery of the scientific research method and of the techniques for data analysis and interpretation aimed at the recovery, conservation and restoration of cultural heritage also in complex environments. - a good historic and artistic knowledge, especially with regard to the artifacts' production technologies. - ability to merge multidisciplinary skills in order to cope with complex scientific problems concerning the recovery, conservation, enhancement and enjoyment of cultural heritage. - advanced analysis skills of the problems concerning the interactions between cultural heritage and its biological and chemical-physical environment. - advanced skills on archaeometry applications to the various fields of interest. <p>Masters graduates in Science and Technology for the Conservation of Cultural Heritage will work in scientific research and in management and maintenance of cultural heritage, both in public bodies and in private practices operating in the field of conservative restoration and environmental recovery. Such specialists will be able to perform in full autonomy, with the utmost responsibility and with the help of technical, scientific, financial and human resources, the following activities:</p> <ul style="list-style-type: none"> - detection and critical analysis of methods, materials, measurements and techniques for the recovery, conservation, restoration and enhancement of cultural heritage. - leading roles in science museums, science cities, science parks, science exhibitions. - collaboration to the planning and implementation of IT systems for cultural heritage data treatment. - diagnosis before and during the conservation intervention and performance of the required checks and tests. - detection of the causes and mechanisms of deterioration and evaluation of the scientific results. - participation in cultural heritage educational activities. <p>The multidisciplinary nature of the cultural heritage field calls for a variety of programs aimed at the acquisition of specific skills. The Study Program Council provides for courses which allow to meet the scientific and professional requirements of the field and at the same time for a group of courses to complete the humanities education and to offer specialization in general disciplines. Courses dealing with the Science and Technology for the Conservation are aimed at training students in the field of materials, measurements and techniques for the recovery, conservation, restoration and enhancement of cultural heritage. The Earth and Natural Sciences subjects train students for leading</p>			

	<p>roles in science museums and to perform diagnoses before and during the conservation intervention. The cross-curricular subjects provide students with historical and artistic culture, in particular with regard to the production technologies of artifacts; the related or additional activities consist in in-depth studies on specific issues of interest for cultural heritage. Most of the courses are concentrated in the first year, while the second year is especially devoted to thesis work for the achievement of the master's degree.</p>
Course content	
Teaching methodologies	<p>- Independent thinking: The independent thinking will be assessed in exams and in the activities carried out for the degree exam, that is given great prominence in the overall opinion.</p> <p>- Communication skills: The master's degree is awarded to students who have acquired the ability to convey information, ideas, problems and solutions to a specialist and non-specialist audience in the field of conservation and restoration of cultural heritage, by clearly explaining the scientific principles and methods employed. Such communication skills are particularly sought for because the interventions on cultural heritage typically require teams of experts with highly diversified skills and state-of-the-art research methods. Such skills are acquired thanks to a cross-curricular approach, taught in several courses, which requires a proper use of scientific terminology for a suitable conveyance of concepts. Communication skills are developed all over the study programme: on the occasion of meetings between teachers and students, in team lab activities, in seminars held both in core and additional courses, as well as during the thesis work. Such skills will be also assessed in written and oral exams or in mid-term tests, if any, in lab activities, in the additional educational activities and in the degree exam.</p>
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK/FIELDTRIPS ○ NOTES-BIBLIOGRAPHY ○ Laboratory work ○ Lectures
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ ICT CLASS
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ FINAL THESIS
Staff	MEMBERS OF THE DEPARTMENT IN COLLABORATION

Credits	
Admission	
Notes	

No	Title	Institution-School Department	Website	ECTS
15	Master of Conservation of Monuments and Sites Advanced Master's	KU Leuven	https://onderwijsaanbod.kuleuven.be/opleidingen/e/CQ_52688406.htm#activetab=diploma_omschrijving!	TOTAL 90 2years
Syllabus	Term	COURSES		
	1 ST	COMPULSORY THEORETICAL AND METHODOLOGICAL		
		Conservation of Architectural Heritage: History, Theory and Practice Heritage and Sustainable Tourism Development Building Materials and Conservation Techniques Conservation Policies		
		OPTIONAL COURSES To choose two or three		
		Landscape Architecture Human Settlements in Development Theory and Practice of Urbanism since 1945 Project Development and Management Geomatics for Urbanism and Spatial Planning Economic and Sustainability Aspects of Architectural and Urban Design Advanced Building Materials Sciences Space, Society and Policy Culture, Ecology and Development Social and Cultural Anthropology: Basic Concepts and Theories Interdisciplinary Perspectives on Development and Cultures Urban Social Geography Urban Anthropology Anthropology and Travel Ethnographic Fieldwork: Exemplary Research Modernity and the Architecture of the City, Part 1 Methodology of Digital Documentation Monuments and museums - museology issues		
		PROJECT BASED EDUCATION		
		Building Archaeology Conservation of Urban Sites and Landscapes: History, Theory and Practice Analysis, Registration and Documentation Techniques Workshop Integrated Project Work		

	2 ^D	Professional Internship RESEARCH TRAINING Research Seminars Master's Thesis
Curriculum	Cultural heritage is a valuable resource for sustainable development of the environment we live in. The Master of Conservation of Monuments and Sites is an advanced international and interdisciplinary study programme in the conservation and restoration of historic monuments and sites. A 'once-in-a-lifetime experience' for built heritage preservation students.	
Course content	1st& 2^D SEMESTER	During the first and second semester the students are trained in a common theoretical and methodological framework. The theoretical knowledge is put into practice during various workshops and integrated projects dealing with the different aspects of conservation. Lectures are taught in small groups in close contact with professors, renowned experts and foreign guest lecturers each covering a broad range of expertise.
	3D SEMESTER	The third semester consists mainly of the master's thesis, i.e. individual research work in the field of conservation, supported by an ad hoc study programme. This semester concentrates on research training with seminars, including a thematic week (open to first- and second-year's students), supporting the writing of the master's thesis. It is completed with a professional internship, which aims to introduce students to the world of heritage practice.
Teaching methodologies	LECTURES LABORATORY WORK SEMINARS/CONFERENCES WORKSHOPS/EDUCATIONAL TRIPS/ FIELDWORK EXPERIENCE <ul style="list-style-type: none"> ○ APPLIED RESEARCH (EG. CONTACTING WITH INSTITUTES & RESEARCH CENTERS IN GREECE & ABROAD) ○ INTERNSHIPS 	
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK/FIELDTRIPS ○ NOTES-BIBLIOGRAPHY 	
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ LABORATORY OF BUILDING MATERIALS ○ ICT CLASS 	
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ FINAL THESIS 	

Credits	90ECTS
Admission	<p>CREDITS POINTS ALLOCATION (IN A RANGE OF 100)</p> <p>A STAGE</p> <ol style="list-style-type: none"> 1. GRADE OF GRADUATE STUDIES (MAX 35 CREDITS) 2. RELEVANCE OF GRADUATE STUDIES (MAX 10 CREDITS) 3. RESEARCH (MAX 10 CREDITS) 4. RELEVANCE OF WORK EXPERIENCE (MAX 12 CREDITS) 5. PUBLICATIONS (MAX 11 CREDITS) 6. OTHER (POST) GRADUATE STUDIES (MAX 10 CREDITS) 7. COVER LETTERS (MAX 6 CREDITS) 8. CERTIFIED KNOWLEDGE OF ENGLISH OR OTHER LANGUAGES (MAX 6 CREDITS) <p>B STAGE</p> <p>ORAL INTERVIEW</p>
Notes	<p><i>The Master in Conservation of Monuments and Sites (Master of Science, 90 ECTS) programme is a three-semester research-based academic degree.</i></p> <p><i>During the first and second semester we provide a common theoretical and methodological framework. The theoretical knowledge is put into practice during various workshops and projects dealing with the different aspects of a conservation project.</i></p> <p><i>The last semester is flexible and can be carried out entirely abroad. It will mainly consist of the writing of the Master Thesis, an individual research work in the field of conservation. A professional internship, which aims to introduce the student to the world of heritage practices, completes the semester</i></p>

No	Title	Institution-School Department	Website	ECTS
17	Ecole de Chaillot- Advanced degree programme (DSA) in architecture and heritage	Ecole de Chaillot	https://www.citedelarchitecture.fr/sites/default/files/documents/2019-10/nouveau_programme_py_dagogique_dsa_2019-2021_octobre_2019.pdf	TOTAL 90
Syllabus	SEMESTER	COURSES		
	1 ST	COURSES		
		Knowledge tools 1		5
		Understanding and studying heritage 1		11
		History 1		5
		Workshop study for a Historical (heritage).city (at your choice) 1		4
	2 ^D	COURSES		
		Knowledge tools 2		5
		Understanding and studying heritage 2		11
		Histoire 2		5
		Workshop study for a Historical (heritage).city (at your choice) 2		4
	3 ^D	COURSES		
		Knowledge tools 3		5
		Understanding and studying heritage 3		11
		History 3		5
		Optional deepening seminars 1/ 2 2		2
	4th	COURSES		
		Transversal workshop 4		10

		Knowledge tools 4		5
		Understanding and studying heritage 4		11
		Getting in a professional situation		13
		deepening seminars to choose 2/2		2
Curriculum	<p>The DSA is a diploma from the Ministry of Culture and Communication. As such, it is positioned at a post-master level.</p> <p>Its organization in teaching units (EU) and its valuation in ECTS allow the mobility of students across the European higher education area.</p> <p>Each UE is assigned a certain number of credit points, which translates the amount of average time that this UE asks the student in proportion to the whole course.</p> <p>Points calculation ECTS takes into account the duration of the courses and the personal working time spent.</p> <p>These points are attributed to the student when he has validated the UE according to the methods provided for in the course.</p> <p>The DSA is equivalent to 120 ECTS.</p>			
Course content				
Teaching methodologies	<ul style="list-style-type: none"> ○ LECTURES ○ LABORATORY WORK ○ SEMINARS/CONFERENCES ○ WORKSHOPS/EDUCATIONAL TRIPS/ FIELDWORK EXPERIENCE ○ APPLIED RESEARCH (EG.CONTACTING WITH INSTITUTES & RESEARCH CENTERS IN GREECE & ABROAD) ○ INTERDISCIPLINARY GROUPS OF STUDENTS 			
Teaching materials	<ul style="list-style-type: none"> ○ ICT ○ FIELDWORK/FIELDTRIPS ○ NOTES-BIBLIOGRAPHY 			
Class infrastructure	<ul style="list-style-type: none"> ○ AMPHITHEATRE ○ LABORATORY CLASS ○ LABORATORY OF BUILDING MATERIALS ○ ICT CLASS 			
Evaluation methods	<ul style="list-style-type: none"> ○ WRITTEN EXAM/ORAL EXAM ○ WRITTEN ASSIGNMENT/REPORT ○ PERFORMANCE/STAGING ○ LABORATORY ASSIGNMENT ○ PARTICIPATION IN THE COURSE/WORKSHOP/CONFERENCES/SEMINARS ○ FINAL THESIS 			

Staff	MEMBERS OF THE DEPARTMENT IN COLLABORATION
Credits	120 ECTS
Admission	CREDITS POINTS ALLOCATION (IN A RANGE OF 100) A STAGE B STAGE ORAL INTERVIEW
Notes	