

# EDICULA STRATEGIC ALLIANCE

Educational Digital Innovative Cultural heritage related Learning Activities

Project Code: 2020-1-EL01-KA203-079108

## EDICULA CURRICULA REFORMATION NTUA SEMINAR SERIES

Towards a curricula reformation of the NTUA MSc “Protection of Monuments –  
Direction: Materials and Conservation Interventions”

### SEMINAR 1

## THE REHABILITATION OF THE HOLY AEDICULE OF THE HOLY SEPULCHRE IN JERUSALEM

*1-7 December 2021 - online seminar*

**Prof. A. Moropoulou, Antonia Lampropoulou**





# EDICULA PROJECT

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NATIONAL TECHNICAL  
UNIVERSITY OF  
ATHENS  
[GREECE]



SAPIENZA  
UNIVERSITA DI  
ROMA  
[ITALY]



BEZALEL ACADEMY  
OF ARTS AND  
DESIGN  
[ISRAEL]

PerpetielSI SRL

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[ROMANIA]



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AUTHORITY  
[ISRAEL]



HELLENIC RESEARCH INSTITUTE  
OF THE ALEXANDRIAN  
CIVILIZATION  
[GREECE]

### EDICULA project Management and Implementation

**O1: EDICULA  
EDUCATIONAL  
TOOLKIT**

**O2: EDICULA  
CURRICULA  
REFORMATION**

**O3: EDICULA  
HANDS-ON  
FRAMEWORK**

**O4: EDICULA  
DIGITAL  
GAMES**

**O5: EDICULA  
SYNTHESIS**

**MULTIPLIER  
EVENTS**

*E1: The Holy Sepulchre  
Hands-on Experience*

03.2022

*E2: The Alexandria  
Immersive Experience*

06.2022

*E3: EDICULA Special Session - TMM\_CH Conf.*

Panel discussion 1:  
*The Holy Sepulchre rehabilitation project:  
An emblematic source of Innovation*

Panel discussion 2:  
*Novel Educational Approach for the Preservation  
of Cultural Heritage*

12.2021

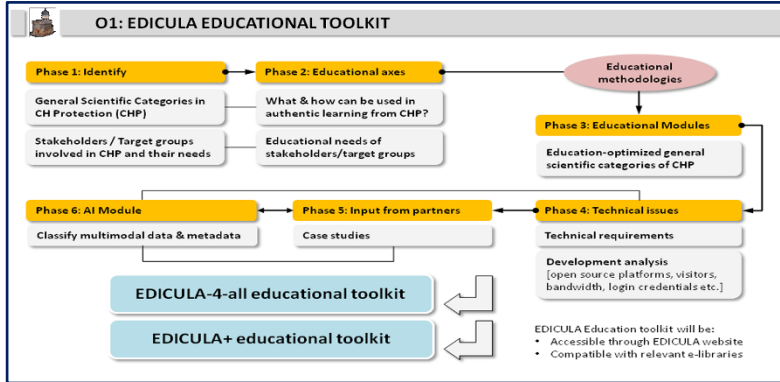
**EDICULA  
Teachers' Course  
02.2023**

Co-funded by the  
Erasmus+ Programme  
of the European Union





# EDICULA OUTPUTS



**O2: EDICULA CURRICULA REFORMATION**

**Postgraduate reformation**

Curricula reformation of the following complementary Master Programs to address the needs for emerging professional profiles in the protection of monuments since new roles and responsibilities among diverse disciplines are required for sustainable development:

- National Technical University of Athens MSc Program in "Protection of Monuments"
- Università degli Studi di Roma "La Sapienza" MSc Program in "Science and Technology for the Conservation of Cultural Heritage"
- Bezalel Academy of Arts and Design MSc MURDes Program in "Urban Design"

**Doctoral reformation**

Three **Cotutelle de thèse** doctoral theses will function as **higher lever evaluation tool to assess the benefits of the reformed curricula and their educational applicability** for innovative research.

**Dissemination activities of the curricula reformation**

The impact and transferability of the curricula reformation will be improved through **interaction with other similar Master Programs**.

**O3: EDICULA HANDS-ON FRAMEWORK**

The **EDICULA hands-on framework** will be **based on** the elucidation of the **values** and understanding **authenticity** and **integrity** as the means for building **CONSENSUS AMONG AUTHORITIES AND DECISION-MAKERS** that require difficult decisions and often contradicting measures.

**EDICULA hands-on framework will evolve from a learning procedure to a teaching activity, focusing on 'training the trainers'**

**EDICULA Teacher's Course**

*These trainers, will then apply their acquired knowledge and skills in the education of graduate students and experts from relevant authorities, thus approaching a wider audience.*

**O4: EDICULA DIGITAL GAMES**

**EDICULA-digital game aims to achieve the following:**

**Provide a quick revision game** which can be at the end of a guided at the site, providing some fun and **promoting team spirit and sportsmanship** (if collaboration and playing in teams will be selected as a delivery method)

**Expose visitors to the new information and science** outside the formalities of classrooms and the one-way flow of reading a book.

Directly relate to the visitors' need for **engaging interaction with a digital experience that provides flow**.

**O5: EDICULA SYNTHESIS**

The **project of the rehabilitation of the Holy Sepulchre** was more than an engineering achievement

The project of the rehabilitation of the Holy Sepulchre, an **integrated diagnostic study, design of works and their implementation**, is an **EXEMPLARY APPLICATION IN THE FIELD OF MONUMENTS PROTECTION**, of **transdisciplinary cooperation**, an outcome of **Innovation**, not only on **Research**, but in the **implementation process**, with emphasis on **technological advancements**



# EDICULA CURRICULA REFORMATION

## Postgraduate reformation

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## MASTER PROGRAMS – FOCUS

The Curricula reformation aims to identify the common ground to merge the **different focus - spanning from purely analytical techniques, to archaeological documentation, to engineering aspects, to sustainability of Cultural Heritage** - of three diverse, yet complimentary, Master courses, through their reformation, in order to address the needs of students from different scientific backgrounds and different professional dynamics.



National Technical University of Athens - **Master Program “Protection of Monuments”** with focus on the methodologies for the conservation interventions



Università degli Studi di Roma ‘La Sapienza’ - **Post Graduate Program in “Science and Technology for the Conservation of Cultural Heritage”** with focus on the techniques of the conservation interventions



Bezalel Academy of Arts and Design - **Post Graduate MUrbDes Program in “Urban Design”** with focus on documentation and knowledge-based design



## MASTER PROGRAMS – AIMS

**PM MSc** aims to provide advanced education and specialization for researchers and professionals in conservation and restoration of architectural heritage and historic materials in order to **develop competencies and skills to solve complex problems**. It consists of two directions: (A) “Conservation and restoration of historic buildings and sites”, organized by the NTUA School of Architecture, and (B) “Materials and conservation interventions”, organized by the NTUA School of Chemical Engineering. The interdepartmental character of the program has been very decisive for its interdisciplinary character.

**STCCH MSc** aims at training researchers and experts in the field of CH conservation and archaeometry **to analyze conservation problems and to detect deterioration processes**, based on the physical, chemical and structural properties of materials, as well as **to identify any possible remedies**. Such experts make interventions in observance of the historical, artistic and architectural framework of artifacts, by contributing thus to their enhancement and protection.

**MUrbDes MSc** is a multi-disciplinary program, building on the **knowledge-based design** project, with the objective of enriching the quality of the environment in cities through innovative design that relates to the theoretical study of the spatial structure of the form of the city. This is supported by faculty in the Department of Architecture. Specific courses are based on the study of the city of Jerusalem as a historic, cultural, social and economic phenomenon and address the prevailing planning paradigms of the last two centuries, in cooperation with the activities of the UNESCO Chair in Urban Design and Conservation Studies



# EDICULA CURRICULA REFORMATION

## Curricula reformation implemented with the evolution

from teaching of characteristic applications as case studies to deepen knowledge per intervention

towards the integrated and interactive seminars per emblematic case study that emphasize transdisciplinarity



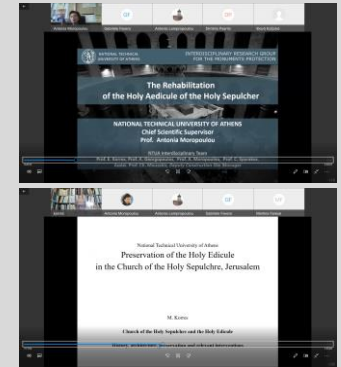
# EDICULA NTUA SEMINAR - ORGANISATION

- The seminar **“The rehabilitation of the Holy Aedicule of the Holy Sepulchre in Jerusalem”** was designed and proposed as the **reformation** of the **optional course 3.8. “Interdisciplinary documentation, diagnosis, revealing and protection of Cultural Heritage towards sustainable development”** of the NTUA Master Program “Protection of Monuments” Direction “Materials and conservation interventions”.
- It was organized from **December 1st until December 7th, 2021** via webex, via daily three-hour sessions from 3 to 6 pm.
- Each three-hour session corresponds to four didactic hours. Thus, including teaching and studying time, NTUA Seminar 1 sums up to **30 hours**, for which optional courses of NTUA’s Master Program “Protection of Monuments” are accredited to **7 ECTS**.
- The seminar has been recorded and will be uploaded at the **EDICULA educational toolkit**



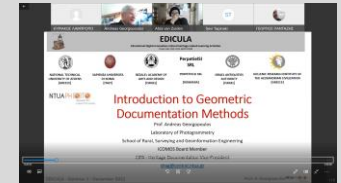
**WEDNESDAY 1 DECEMBER 2021 || 15:00-18:00 EET**

15:00-16:00	Prof. A. Moropoulou	The innovation and challenges of the rehabilitation of the Holy Aedicule of the Holy Sepulchre – Scientific supervision
16:00-18:00	Prof. M. Korres	Architectural documentation of the Holy Aedicule in the open city of Jerusalem
<a href="https://centralntua.webex.com/centralntua/j.php?MTID=m728ce6c2c3d77e4f47bdf00873636725">https://centralntua.webex.com/centralntua/j.php?MTID=m728ce6c2c3d77e4f47bdf00873636725</a>		



**THURSDAY 2 DECEMBER 2021 || 15:00-18:00 EET**

15:00-18:00	Prof. A. Georgopoulos, Prof. G. Pantazis, S. Tapeinaki, R. Chliverou	Dynamic integrated geometric documentation of the monument before, during and after the rehabilitation  Geometric documentation, network setup, structural health monitoring, data collection, photography and laser scanning, parameters for correct photography, monitoring of deformations, data processing, computational photography
<a href="https://centralntua.webex.com/centralntua/j.php?MTID=me8dbaa71de2bd6ed8fcec50da7021b2f">https://centralntua.webex.com/centralntua/j.php?MTID=me8dbaa71de2bd6ed8fcec50da7021b2f</a>		



**FRIDAY 3 DECEMBER 2021 || 15:00-18:00 EET**

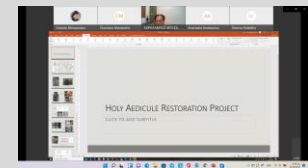
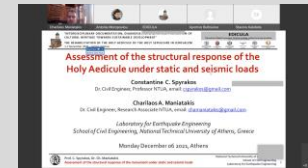
15:00-16:00	Dr. K. Lampropoulos, Prof. A. Moropoulou	The structural evolution of the Holy Aedicule. Prospection of the Past
16:00-17:00	Dr. E. Delegou, Prof. A. Moropoulou	Characterization, archaeometry, archaeogene of building materials of the Holy Aedicule – Compatibility of conservation interventions
17:00-18:00	Dr. M. Apostolopoulou, Dr. E. Aggelakopoulou, Ass. Prof. A. Bakolas, Prof. A. Moropoulou	Historic mortars study – Design and use of compatible restoration mortars at the Holy Aedicule rehabilitation
<a href="https://centralntua.webex.com/centralntua/j.php?MTID=m300f8e5c81260271f48075051596a282">https://centralntua.webex.com/centralntua/j.php?MTID=m300f8e5c81260271f48075051596a282</a>		



**MONDAY 6 DECEMBER 2021 || 15:00-18:00 EET**

15:00-16:30	Prof. C. Spyrakos, Dr. Ch. Maniatakis	Assessment of the structural response of the monument under static and seismic loads
16:30-18:00	Ass. Prof. Ch. Mouzakis	In situ evaluation and implementation of retrofit and strengthening measures of the monument – Construction site management

<https://centralntua.webex.com/centralntua/j.php?MTID=m8b7ccbeeb8f0ec0234a560b47419eb5b>



**TUESDAY 7 DECEMBER 2021 || 15:00-18:00 EET**

15:00-16:00	Em. Alexakis, Ass. Prof. D. Kyriazis, Ass. Prof. A. Doulamis, Dr. K. Lampropoulos, Prof. A. Moropoulou	An exemplary information system and methodology for the integrated management, analysis and dissemination of digital cultural heritage data coming from the rehabilitation of the Holy Aedicule
16:00-17:00	Dr. M. Karoglou, Prof. A. Moropoulou	Monitoring system for the sustainability of the monument  Monitoring air and materials thermohygro-metric characteristics
17:00-18:00	N. Moropoulos	Governance and Management of the Holy Edicule Rehabilitation Project

<https://centralntua.webex.com/centralntua/j.php?MTID=md910f90981ec328b471b56af17b9ee5b>





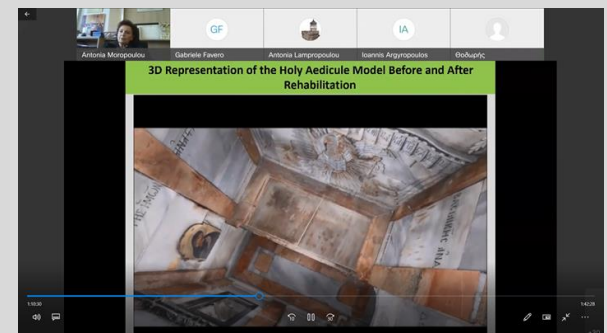
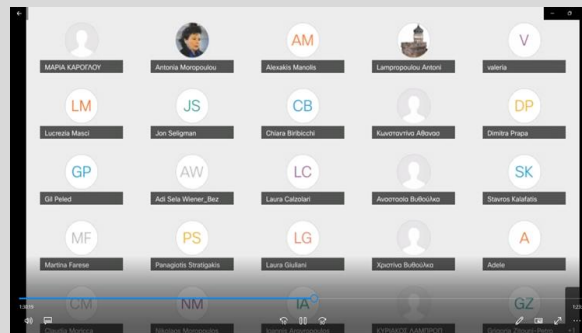
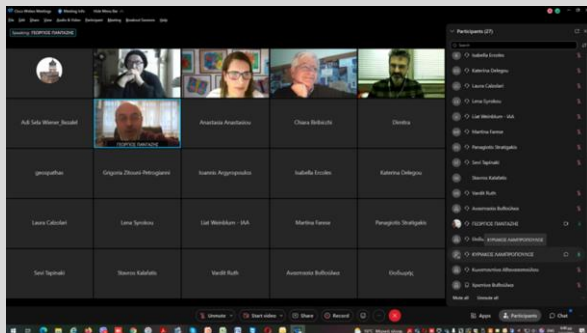
# EDICULA NTUA SEMINAR – PARTICIPATION

In the EDICULA NTUA Seminar participated

- 28 postgraduate students and 15 lecturers from National Technical University of Athens
- 13 postgraduate and post doc students from Università degli Studi di Roma ‘La Sapienza’
- 8 postgraduate students and researchers from Bezalel Academy of Arts and Design

Summing up to a total of **64 participants of various disciplines**

Since the background and the mentality of the participants were of high level, the **dialogue imposed was fast and clear**, leading to 5 to 10 questions per every 3hour lectures.





# EDICULA NTUA SEMINAR – APPROACH



- **Innovation** serving as the key element for producing **new knowledge and novel research**, as the enabling factor to address the challenges of complex projects
- Innovation needed in the **implementation process**, with emphasis on **technological advancements**, holistic digital methodologies, sustainable approaches and management
- Open-minded scientific specialization based on **transdisciplinary collaboration**, with the coordinated involvement of various scientific disciplines, **to address the multi-level challenges of complex projects** of built cultural heritage protection
- Introduction of **sustainability** through a holistic approach – based on compatibility and performance criteria – crucial for both our contemporary built environment, and built heritage



# EDICULA NTUA SEMINAR – APPROACH



- **Competencies** and **technical skills** gained to address multi-modal problems are gained through **problem-based learning** on a real time / real scale rehabilitation scenario



- The **digital nature** of the research served not only as a common **language**, but it was also purposely amplified as a prerequisite **best practices** lever to successfully address future challenges



- Demonstration of the necessity of **scientific support in decision making**, addressing problems in variable environments, under limited time and constraining social-political-religious conditions



- The role of **communication strategies** is an important factor for projects of such magnitude and is critical for society involvement and participation in decision making.



- Know how transfer regards the development of a **methodological transdisciplinary mentality**, as an issues resolution, rather than a duplication of a depository of knowledge



## EDUCATIONAL TOOL

- The 1<sup>st</sup> EDICULA seminar aims to highlight the **innovations applied** and the **transdisciplinary approaches** adopted to address the multi-level challenges of elaborate projects of built cultural heritage protection, such as the emblematic rehabilitation project of the Holy Aedicule of the Holy Sepulchre. It highlights that complex projects entail challenges that cannot be addressed efficiently without the **coordinated involvement of various complementary scientific disciplines**.
- This full-scale integrated project regarded all stages of cultural heritage protection, and as such it serves as an **educational tool par-excellence**.



# LEVER OF EDUCATION

- EDICULA Curricula reformation aims to cover the educational needs for **emerging professional profiles** of scientists in the protection of monuments since **new roles and responsibilities** among diverse disciplines are required in the post-industrial era for sustainable development.
- The graduates of this seminars are expected to serve as a **“nucleus” of Change-of-Mentality**, introduced to new ideas, know-how and expertise.



# TRANSFERABILITY POTENTIAL

- The transferability potential of the EDICULA project responds to contemporary research priorities relevant to CH, such as advanced diagnosis, monitoring and assessment of decay and pathology, mapping and assessment of environmental impact in real scale and real time, strategic design of conservation interventions, integrated environmental management of CH for its sustainable preservation.
- This potential will be tried in another case-study during the **EDICULA Hands-on Workshops in Jerusalem and Alexandria** in 2022.
- Finally, the **EDICULA Teachers' Course** will be implemented in 2023, in order to train higher education teachers to promote the transdisciplinary scientific synthesis as the key element for innovative education