

MASTER IN ARCHITECTURAL CONSERVATION AND REHABILITATION

The Master in Architectural Conservation and Rehabilitation (M.ARCO) at Polytechnic University of Puerto Rico prepare leaders in the documentation, technology, and conservation of historic structures, sites, neighborhoods to protect our built environment and heritage.

PROGRAM PHILOSOPHY AND OBJECTIVES

At Polytechnic University of Puerto Rico's the Master in Architectural Conservation and Rehabilitation, encourage individuals from diverse backgrounds and offer them the opportunity to learn about the field of preservation in one of the oldest countries in the New World. Puerto Rico's rich built environment – resulting from its five hundred years of architectural heritage – will serve as a laboratory providing myriad opportunities to experience historic preservation first hand.

The mission of the Master in Architectural Conservation and Rehabilitation at Polytechnic is to prepare leaders in the documentation, technology, and conservation of historic structures, sites and neighborhoods. Students will acquire the diverse skills necessary for their professional careers to face the multiple challenges posed today at protecting our built environment addressing the built heritage of Puerto Rico and the Caribbean Region.

The School of Architecture at ARQPOLI have developed a fundamental understanding of the issues of historic preservation since the foundation of the school in 1995 with the course ARCH 3010 Intermediate Design I a design studio related to structures of historic significance. Furthermore, in 2001 with the inauguration of the *Architectural Conservation Laboratory* by former Dean Jorge Rigau, FAIA and architect and former professor Beatriz Del Cueto, FAIA the advanced technology preservation courses; ARTE 0451, Architectural Conservation Laboratory and ARTE 0410, Preservation Technology, were available to students. In addition to these courses, two more classes on conservation topics were developed, ARCT 0430 Conservation Theory and SOHU 2020 Archeology for Architects expanding the offerings at the school of architecture. These courses serve today as preparatory for Architecture students interested in pursuing a master's degree in conservation. In addition, more recently through the *Architectural Conservation Laboratory* we have developed two workshops to further underpin the diverse topics and contemporary issues regarding preservation. The Architectural Documentation Workshop exposed students directly to the documentation of historic buildings using the standards of the National Park Service (NPS) Heritage

Documentation Program (HABS, HALS and HAER). As part of these workshops, students have had the opportunity to participate in the NPS – Heritage Documentation Program Peterson Prize Student Drawing Competition, winning First Place two years in a row (2014 and 2015).

Objectives of the program:

To implement our philosophy and vision, the Master in Architectural Conservation and Rehabilitation (M.ARCO) Program has established the following goals in the offerings:

- Understanding of the history of the design environment; including the history of architecture, urban development, landscape architecture and material culture.
- Understanding the history and theory of historic preservation.
- Ability to perform documentation and recording techniques used in preservation and archeology.
- Field application of knowledge including communication skills and hands-on experience.
- Ability to understand issues of appropriateness, restoration, rehabilitation, in-fill, exterior and interior concerns at a variety of scales, and their effect on buildings, neighborhoods, communities and landscapes.
- Ability to understand the history, evaluation and conversation in the normal range of building materials and systems.
- Ability to understand the marketing principles, private and public finance, property management and budget preparation.
- Comprehend the constitutional law, preservation case law, federal, state and local regulatory legislation and administration.

GRADUATE PROFILE & OUTCOMES

The graduate program intends to develop professionals with the necessary knowledge to work on multidisciplinary projects related to architectural conservation and rehabilitation.

Students completing the Master in Architectural Conservation and Rehabilitation (M.ARCO) degree will be able to acquire knowledge and skills like:

- Recognize how historical events and precedents have served as vital tools to support planning and design solutions and reactions.
- Comprehend spatial, formal, compositional and technological expression as understood today.

- Identify key architectural styles, materials and technologies, as well as historical references.
- Outline significant features and characteristics of vernacular architecture.
- The student should be able to distinguish basic philosophical, methodological and practical approaches to address conservation, restoration, rehabilitation and adaptive reuse projects.
- Identify tools for coming to terms with theoretical, contextual and pragmatic issues conducted simultaneously in architectural conservation.
- Develop a sense for strong arguments for debating and/or defending contemporary conservation stances as developed throughout history.
- Demonstrate proper establishment methods for analyzing structures, by differentiating from structural and esthetical conditions and understanding the diverse techniques for assessing building conditions.
- Recognize the difference between primary and secondary sources of historic, construction and architecture relevance to place them within the larger context of their place and time.
- The student will develop a broaden understanding of the skills necessary to work on an architectural conservation project, by demonstrating learning application of research and survey, and the use of preservation technologies while working on a real project.
- Students will devise issues, scoping, researching, articulation and planning solutions for the preservation of specific structures and their environment.
- Examine the role of theories and debates concerning preservation of the built environment, planning, its legal underpinnings, interpretation and advocacy.
- Prioritize current political, and economic issues affecting preservation in the public realm.
- Understand technical vocabulary, be knowledge and proficiency regarding traditional construction technologies, and contemporary building preservation of traditional building materials.
- Comprehend diagnostic techniques and possible architectural conservation philosophical alternatives.
- Acknowledge compatibility in design as well as in any intervention procedure and construction materials between historic and contemporary interventions.
- Understand historic preservation principles and theories in the United States and Puerto Rico, including how to assess the National Register of

Historic Places, National Historic Landmark and the local Register Sites and Historic Zones managed by the Puerto Rico Planning Board.

- Comprehend the delicate balance that ensues preserving irreplaceable historic places.
- Appreciate the intricacies and complexities of the planning and execution of federally assisted projects designed to pursue economic growth and development and conserving historic properties.

CAREER OPPORTUNITIES

The conservationist is responsible for the protection of the built historic heritage, which includes all the buildings with heritage and cultural value that have been nominated or must be nominated by the different offices and / or agencies, whether public or private. In addition, it carries out the historical, graphic and photographic documentation of the structure and the supervision or direction of projects that are carried out in these structures so that the interventions comply with the standards and norms of conservation.

The alumni of the Master in Architectural Conservation and Rehabilitation at the Polytechnic University of Puerto Rico will serve as an important resource and base of support for the graduate department and to the heritage conservation of Puerto Rico. After graduation, the now professionals in conservation could serve as staff and conservation officers in private and public local and state major preservation organizations, and preservation societies such as: *Instituto de Cultura Puertorriqueña* (ICP), *Oficina Estatal de Conservación Histórica* (OECH-SHPO), *Para la Naturaleza*, National Trust for Historic Preservation, National Park Service, and many more. Furthermore, alumni could serve as mentors for current graduates and help promote historic preservation education throughout workshops and other events.

PROGRAM REQUIREMENTS

Admissions Requirements

- All applicants must have a bachelor's degree from an accredited institution, (or its equivalent from a foreign institution), with a minimum grade-point average of 2.75. There is no restriction on the applicant's previous field of study, and indeed we encourage diversity in all senses.
- Graduate Application Form
- A non-refundable admission fee
- Demographic sheet
- Official Transcripts

Applicants who are admitted will be required to request official transcripts be forwarded to the Graduate Admissions Office from each institution where undergraduate or prior graduate work was undertaken. Sealed envelopes of transcripts that meet the requirements below must be submitted.

Transcripts must bear the signature of the registrar and seal of the granting institution and should include the years of attendance, courses taken, grades received, class standing, and any degree, certificate or diploma received.

Graduation Requirements

In addition to the general graduation requirements specified in the institutional catalog, candidates to the Master in Architectural Conservation and Rehabilitation must:

- Complete the plan of study with at least the minimum number of 39 credit hours of graduate courses.
- The student must comply with all this with a minimum grade point average of 3.00.
- Complete a Practice or Internship approved by the Head of the Department.
- Present and defend a final project

DEGREE OFFERED

The Master in Architectural Conservation and Rehabilitation (M.ARCO) Program includes a curriculum of two years master’s degree.

A final project is required for all candidates. This project consists of 3 credits- hours were the students must demonstrate all the knowledge acquired in the program. The project shall be directed by a member of the faculty, which also acts as the students graduate committee chairperson. The purpose of this final project is to expose the student to a reasonable independent research experience that enhances his / her academic development. The student should prepare and carry out a structured and methodical study of pertinence to the profession. Publication of this work in journals, conference proceedings, and / or presentations will be strongly encouraged.

CURRICULAR STRUCTURE AND SEQUENCE

The Master in Architectural Conservation and Rehabilitation focuses on:

- History courses, theory of conservation and architectural preservation

- Courses on the history of the city and the vernacular architecture of Puerto Rico and the Caribbean
- Courses on documentation, research, analysis of the built environment and conservation proposal
- Course on preservation technology
- Architectural Conservation Laboratory
- Course on laws, economics and regulations in architectural conservation
- Archeology courses in architecture and cultural landscapes
- Courses on the conservation of materials and special topics in historical preservation

CURRICULAR STRUCTURE

The curriculum reaches maturity with a final project. Courses, credit- hours and the curricular sequence are presented in the following table:

M.ARCO CURRICULAR SEQUENCE

Year I

Fall Trimester		
Course	Title	Credit-Hours
ARCO 6110	Conservation History and Theory	3
ARCO 6112	Vernacular Architecture in Puerto Rico and the Hispanic Caribbean	3
ARCO 6250	Archeology of Architecture*	3

Winter Trimester

Course	Title	Credit-Hours
ARCO 6130	Preservation Research and Survey	3
ARCO 6220	Preservation Technology	3

Spring Trimester

Course	Title	Credit-Hours
ARCO 6132	Documentation and Analysis of the Built Environment	3
ARCO 6224	Materials Conservation Seminar*	3

Summer

Course	Title	Credit-Hours
ARCO 6142	Preservation Internship **	3
ARCO 6140	Preservation Practicum**	3

Year II

Fall Trimester

Course	Title	Credit-Hours
ARCO 6210	Conservation Studio	3
ARCO 6222	Architectural Conservation Laboratory	3

ARCO 6260	Special Topics in Historic Preservation*	3
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Winter Trimester

Course	Title	Credit-Hours
ARCO 6230	Preservation Law and Economics	3
ARCO 6252	Cultural Landscapes*	3

Spring Trimester

Course	Title	Credit-Hours
ARCO 6120	History and Theory of Cities: A Comparative Method	3
ARCO 6310	Architectural Conservation Final Project	3

Elective Courses*

Six (6) credit-hours from the Master in Architectural Conservation and Rehabilitation program offering.

Summer Practice or Internship**

Optional and must be approved by the Head of the Department. (3 credit-hours)

Each student must verify pre-requisites or corequisites prior registering.

COURSE DESCRIPTION

ARCO 6110 - Conservation History and Theory

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: None | Corequisite: None

Ideas and theories linked with preservation ideals are presented and debated upon. Aspiration versus realization within the conservation field becomes the background against which the history of building and rebuilding is examined.

ARCO 6112 - Vernacular Architecture in Puerto Rico and the Hispanic Caribbean

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: None | Corequisite: None

This class explores the history of the built environment from the perspective of cultural change, looking closely at vernacular cultural landscapes throughout Puerto Rico and the Caribbean, their Spanish and American influence while attempting to understand their place in the regional, national and global contexts.

ARCO 6120 - History and theory of Cities: A Comparative Method

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: None | Corequisite: None

This class provides an introduction to the history and theory of modern urban development and planning. Building upon urban planning theory as well as urban

social science (geography, sociology, political science, history), the course explores the emergence, development and transformation of cities.

ARCO 6130 - Preservation Research and Survey

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110 | Corequisite: None

This course proposed methods for researching historic structures and sites using archival and physical evidence, documenting structures through professional reports, architectural photography, and preliminary drawings.

ARCO 6132 - Documentation and Analysis of the Built Environment

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110, 6130 | Corequisite: None

This course explores various methods used for building condition assessment within a specific subject(s) of study within a built environment. Through field notes, photographic documentation and critiques students work in the understanding and interpretation in order to propose a final outcome.

ARCO 6140 - Preservation Practicum (by approval)

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6120, ARCO 6132, ARCO 6220 | Corequisite: None

This course focuses in practical experience in the broad aspects of architectural conservation through the supervised application of concepts previously learned.

ARCO 6142 - Preservation Internship (by approval)

Three credit-hours. Hours lecture will be coordinated with the faculty during the internship. Prerequisite: ARCO 6110, ARCO 6130, ARCO 6220 | Corequisite: None

The Preservation Internship is a three credit course intended for graduate students who elect not to complete the Preservation Practicum Course. Students interested could apply for and internship with an organization engaged in historic preservation (this can be a public agency, nonprofit or private firm). The student will formulate a plan of work and a series of pedagogical goals to satisfy both the practical needs of the project and the academic requirements for the course.

ARCO 6210 - Conservation Studio

Three credit-hours. Two two-hour studio and lecture periods per week. Prerequisite: ARCO 6110, ARCO 6130, ARCO 6132 | Corequisite: None

This course concentrates on documenting, analyzing and planning for the preservation of buildings and their settings as a basis for understanding the technical, theoretical and procedural aspects of conservation.

ARCO 6220 - Preservation Technology

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110, ARCO 6112

Corequisite: None

Technical aspects pursuant to historic preservation are discussed and demonstrated through laboratory problems. Materials used in restoration, rehabilitation and conservation projects are tested and weathered to consider short and long range effects of their use.

ARCO 6222 - Architectural Conservation Laboratory

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110, ARCO 6130, ARCO 6132 | Corequisite: None

Through a series of field and scientific laboratory exercises the student expands the knowledge of traditional building materials. The course includes class lectures, site visits, documentation, condition survey and collection of field samples and laboratory experiments.

ARCO 6224 - Materials Conservation Seminar

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110 | Corequisite: None

The course will introduce to the theory and conservation practice of traditional historic building materials with and emphasis in brick, wood, stone, glass, terracotta, gypsum, wrought iron, tin plates, quicklime mortars, as well as cement and early types of reinforced concrete.

ARCO 6230 - Preservation Law and Economics

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: None | Corequisite: None

The course provides an introduction to historic preservation, laws and economics issues in the United States of America and Puerto Rico. It addresses historic preservation economic and social benefits. In addition to federal laws, analysis of the island's preservation regulations will also be carried out.

ARCO 6250 - Archeology of Architecture

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: None | Corequisite: None

This course covers the basic principles of archeology of architecture and its application to historical structures in order to understand them from a multidisciplinary perspective. Such principles cover the methodological aspects of the practice from analysis of construction techniques and traditional building materials as they have been employed over time. Such analysis is framed through a sequential analysis on the myriad building interventions using a stratigraphic method. These tools of analysis and interpretation will serve as protocol to understand and later assess possible interventions within historical buildings.

ARCO 6252 - Cultural Landscapes

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110 | Corequisite: None

The course will provide an introduction to cultural landscapes and an understanding of its histories and theories.

ARCO 6260 - Special Topics in Historic Preservation

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: ARCO 6110 | Corequisite: None

The course examines special areas, topics or issues in architectural conservation and rehabilitation. Taught by a specialist from within the field being studied or as an alternative methodology. Course topics may range from architectural styles, trends or types of construction, to current preservation challenges and developments such as code compliance for historic buildings, historic sites and case studies of specific endangered properties in the region.

ARCO 6310 - Architectural Conservation

Final Project

Three credit-hours. Two two-hour lecture periods per week. Prerequisite: Student must have all required courses, studio and practicum completed

Corequisite: None

This course focuses on the development of a final, comprehensive project in architectural conservation. Projects may be research or site-based at an advanced level of complexity and challenge. The project should synthesize the theoretical and applied aspects of their conservation education.

PROGRAM FACULTY

RIGAU PÉREZ, JORGE - Professor, Architecture; MA History; University of Puerto Rico, Río Piedras, PR (1993); BArch. Architecture; Cornell University, Ithaca, NY (1975).

VELÁZQUEZ FIGUEROA, JUAN C. – Auxiliary Professor, Architecture; MA Fine Arts Sculpture; Universidad Complutense de Madrid, Spain (1988); BA, Escuela de Artes Plásticas de Puerto Rico (1985).

VILLALOBOS RIVERA, EVELYN M. – Lecturer; Master in Restoration of Architectural Monuments, Universidad Politécnica de Cataluña (2018); BArch. Architecture, Polytechnic University of Puerto Rico (2016).

COLÓN RODRÍGUEZ, YARA MAITE –Lecturer III, History; PhD History and Theory of Architecture;

Universidad Politécnica de Cataluña (2010); MA History, Art, Architecture and City; Universidad Politécnica de Cataluña (2002); BA, University of Puerto Rico (2001)

MARTÍNEZ MARTÍN, MARÍA MERCED – Lecturer II, Architecture; MArch. Architecture; Escuela Técnica Superior de Arquitectura, Barcelona (2003); B. Architecture and Urbanism; Escuela Técnica Superior de Arquitectura, Barcelona (2003).

MARTÍNEZ CASTAÑEDA, IMANDRA – Lecturer; Ph.D. History of Puerto Rico and the Caribbean, Centro de Estudios Avanzados de Puerto Rico y el Caribe (in progress); MA Archeology of Architecture, Centro de Estudios Avanzados de Puerto Rico y el Caribe (2016); BArch. Architecture, Instituto Superior Politécnico José Antonio Echevarría (2000).

MORALES ABELLA, MINETTE – Lecturer; MS Interior Design; Pratt Institute (2014); BA Photography, Plastic Arts School (2011); Associate Degree in Interior Design, San Juan School of Interior Design (2000).

We have identified other Preservation Professionals that could strength our Graduate Program in Architectural Conservation and Rehabilitation:

OJEDA O'NEILL, PABLO – Lecturer; Post-Degree in Restoration of Historical Monuments; Architectural Association School of Architecture, London England (1983); Master of Architecture; Architecture Faculty, University of Puerto Rico (1981); Bachelor's in Environmental Design; Faculty of Architecture, University of Puerto Rico (1979).

ORTIZ COLOM, JORGE – Lecturer; Ph.D. with Specialty in History of Puerto Rico and the Caribbean, Center for Advanced Studies of Puerto Rico and the Caribbean, San Juan, PR (2017); Master of Architecture, University of Puerto Rico (1981); Bachelor's in Environmental Design; Faculty of Architecture, University of Puerto Rico (1980).

LOPEZ, CARMEN MARLA – Lecturer; M.A., Historic Preservation, Savannah College of Art and Design (2010); B.A., Architecture, Florida A&M University, Tallahassee, FL (1992).

RODRÍGUEZ LÓPEZ, JORGE – Lecturer; Ph.D. Degree in American Anthropology. Specialized in Caribbean Archaeology; Complutense University of Madrid (2008); ABD Diploma Ph.D. Program, Department of American History II, American Anthropology; Complutense University of Madrid (2003); B.A. Degree in History, University of Puerto Rico, Cayey Campus (1999).

ANGUEIRA ANDRACA, OLGA – Lecturer; Master of Landscape Architecture; Harvard Graduate School of Design Cambridge, MA (2004); Bachelor of Architecture, Minor in English- Creative Writing; University of Miami, School of Architecture Coral Gables, FL (2001).

GALA AGUILERA, SANTIAGO – Lecturer; Master of Architecture; Architecture Faculty, University of Puerto Rico, (2007); Bachelor's in Environmental Design; Faculty of Architecture, University of Puerto Rico, (1999).

ROVIRA PONS, PERE – Lecturer; Bachelor's in fine arts with Specialty in Conservation and Restauration of mural painting, sculpture in stone and historical-artistic elements associated with architecture and archaeological sites (1988).

VALLS ALECHA, ANTONI – Lecturer; Master in Restauration of Architectural Monuments, Universidad Politécnica de Cataluña (2015); BArch. Architecture, Escuela Técnica Superior de Arquitectura, Barcelona (2013).

VILANOVA OMEDAS, ANTONI – Lecturer; Master in Pathology, Diagnosis and Techniques of Rehabilitation and Intervention in the Architectural Heritage, Universidad Politécnica de Cataluña (----) BArch. Architecture with Specialization of Projects, Urban Planning and History, Escuela Técnica Superior de Arquitectura, Barcelona (----).

BARBERÀ GINÉ, ALEIX – Lecturer; Ph.D. Cleaning of Architectural Monuments, Universidad Politécnica de Cataluña (Current); Postgraduate Specialization in Virtual Restoration, Universidad de Alicante (2017); Master in the Direction of Conservation and Restauration Projects, Iniversidad de Barcelona (2013); Master in Cultural Management, Universitat Oberta de Cataluña (2012); Master in Restauration of Architectural Monuments; Universidad Politécnica de Cataluña (2012); Postgraduate specialization in new technologies applied to museography, Universidad de Alcalá de Henares (2012); Postgraduate in Expert Museum Education, Universidad de Alcalá de Henares (2012); Postgraduate in Techniques not destructive applied to the Conservation of Historical Heritage, Universidad Pablo de Olávide (2011); Postgraduate of Expert in Preventive Conservation, Universidad de Alcalá de Henares (2011); Bachelor in Conservation and Restoration of Cultural Assets, Escuela Superior de Conservación y Restauración de Bienes Culturales de Catalunya (2010).

CAAMAÑO-DONES, JOSUÉ – Lecturer; Certificado en Diplomacia y Relaciones Internacionales, Escuela Diplomática “Dr. Arturo Morales Carrión” del

Departamento de Estado del Estado Libre Asociado de Puerto Rico e Instituto de Educación Superior en Formación Diplomática y Consular “Dr. Eduardo La Torre Rodríguez” de la República Dominicana y el Centro de Estudios Avanzados de Puerto Rico y el Caribe (2014); Diplomado en Documentación y Escritura: Paleografía, Diplomática y Archivística, Universidad Complutense de Madrid, España (2007); PhD-DEA, Programa de Doctorado, Departamento de Historia de América I (Estado y Sociedad en América), Facultad de Geografía e Historia, Universidad Complutense de Madrid, España, (2006); Maestría en Artes con concentración en Historia, Programa Graduado de Historia, Departamento de Historia, Universidad de Puerto Rico, Recinto de Río Piedras (2006); Bachillerato en Artes con concentración en Historia Europea, Departamento de Historia, Universidad de Puerto Rico, Recinto de Río Piedras (1997).

CARDONA ROIG, PEDRO M. – Lecturer; MAUD. Master of Architecture in Urban Design, Harvard University (1991), BArch. Architecture, Rhode Island School of Design (1987); B.F.A. Bachelor of Fine Arts, Rhode Island School of Design (1987).

DEL VALLE BERTRÁN, TERESITA M. – Lecturer; BArch. Architecture, Cornell University (2004); MLA. Master in Landscape Architecture, Polytechnic University of Puerto Rico (2014).

SILVESTRE LUGO, JOSÉ C. – Lecturer; Maestría en Arquitectura, Universidad de Puerto Rico (1998); Bachillerato en Diseño Ambiental, Universidad de Puerto Rico (1996).