



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Architettura		
ACADEMIC YEAR	2019/2020		
MASTER'S DEGREE (MSC)	ARCHITECTURE		
SUBJECT	BUILDING REHABILITATION TECHNOLOGIES		
TYPE OF EDUCATIONAL ACTIVITY	D		
AMBIT	50673-A scelta dello studente		
CODE	07343		
SCIENTIFIC SECTOR(S)	ICAR/12		
HEAD PROFESSOR(S)	MAMI' ANTONELLA	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	10		
INDIVIDUAL STUDY (Hrs)	160		
COURSE ACTIVITY (Hrs)	90		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	5		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	MAMI' ANTONELLA Tuesday 11:30 13:30 Studio del docente presso Dipartimento di Architettura viale delle Scienze ed.8 - Previo appuntamento via mail		

PREREQUISITES	<p>Ability to recognize and represent the typological, morphological and technological traits of buildings and of the built environment that are relevant to the design choices for interventions on existing buildings. This skill should already be established through earlier educational experiences included in the training program, particularly in Architectural Technology and Architectural Construction Studio.</p> <p>In particular, skills will have to be already acquired on the following topics: systemic view of the built environment and needs-performance approach; fundamental characteristics of materials and construction techniques; notions of statics and technical structures; ability to conceive, design and adequately represent the components of the building system, controlling the role of materials and construction procedures.</p>
LEARNING OUTCOMES	<p>KNOWLEDGE AND UNDERSTANDING: Knowledge in the context of the construction elements in recent and traditional historical building. Technological and technical analysis skill, with respect to of existing buildings and ability to identify the choices of intervention.</p> <p>APPLYING KNOWLEDGE AND UNDERSTANDING: Knowledge of building systems and technical elements, ability to identify the conservation status and conditions of the existing buildings and the choice of technical intervention solutions.</p> <p>MAKING JUDGEMENTS: Ability to verify in the simulation and in reality the suitability and compatibility of the chosen solutions with the existing, even with respect to a wide scenery offered by the literature and from technical information of the production market.</p> <p>COMMUNICATION SKILLS: Ability to communicate in written-graphic form and orally the reasons of own design choices and the outcomes of the performed analyses.</p> <p>LEARNING SKILLS: Ability to update and document in the field of diagnostics and technical choices.</p>
ASSESSMENT METHODS	<p>The evaluation of learning, on a scale of thirty, will consist of only one final exam. It will consist of an individual interview during which a discussion will be conducted on topics covered with the help of technical sketches prepared by the student during the exam and the illustration of the paper produced as exercise. The questions, open ended and not less than four, and the papers produced will test the learning outcomes and verify:</p> <ul style="list-style-type: none">a) the possession of adequate presentation skills and proper use of technical and graphic language;b) acquired knowledge;c) the ability to reprocess the gained knowledge and transpose it in the proposed design solutions. <p>With regard to the assessment of knowledge, the ability to establish connections between theoretical contents and the solutions related to the knowledge of the built environment and the technical intervention on that existing will be ascertained.</p> <p>The criteria for defining the assessment thresholds are the following: Excellent (30-30 e lode): excellent knowledge of the topics, excellent language skills, good analytical ability, the student is able to apply knowledge to solve the proposed issues effectively and identify correct and appropriate design solutions and technical intervention; Very good (26-29): good mastery of the subjects, full language skills, the student is able to apply knowledge to adequately solve the proposed issues and identify correct and appropriate design solutions and technical intervention; Good (24-25): Basic knowledge of the main topics, discrete language skills, the student is able to apply knowledge to solve proposed issues and identify design solutions and technical intervention although with some uncertainty; More than sufficient (21-23): the student does not have full mastery of the main topics of the program, but he has the knowledge, a satisfying language skills, a limited ability to apply his/her knowledge in problem solving and identifying the design solutions and technical intervention; Sufficient (18-20): the student has a minimum basic knowledge of the main issues of the program and of the technical language, just enough ability to independently apply the acquired knowledge to solve the proposed issues and identify the design solutions and technical intervention; Insufficient: the student does not have the minimum acceptable knowledge of the main issues of the program and of the technical language, he/she has not the ability to apply his/her knowledge to solve the proposed issues and identify the design solutions.</p>
EDUCATIONAL OBJECTIVES	<p>The aim of the course is to introduce the techniques of intervention on the existing building, of ancient and recent times, in order to carry out an inspection</p>

	and, if necessary, an increase in the performance of the architectural work through maintenance, repair, retrofitting, consolidation, land remediation and rehabilitation, integration of technical elements. At the end of the course the student must be able to decline the intervention techniques according to the requirements of the existing project, such as safety, comfort, regulatory compliance (Energy, structural and plant engineering adjustment), easiness to equip and maintainability, to achieve the adjustment of buildings and the contemporary needs of users.
TEACHING METHODS	- Lectures - Graphs of analysis and intervention - Seminars
SUGGESTED BIBLIOGRAPHY	-CATERINA Gabriella, Tecnologia del recupero edilizio, UTET, Torino, 1989 -MAMI' Antonella , Nonstructural seismic prevention and rehabilitation, Aracne editrice, Roma, 2010 Ulteriore bibliografia di approfondimento sara' indicata alla presentazione del corso e del programma e durante le singole lezioni – Sara' anche fornito materiale didattico dal docente Further references will be given during the presentation of the course and of the program and during the individual lessons - teaching materials will also be provided by the teacher

SYLLABUS

Hrs	Frontal teaching
10	Technological culture and history of techniques: systems and construction techniques, outsourcing.
6	The analysis of the statement of facts and performance analysis
8	The processes of breakage and degradation: analysis and control
4	Logics and intervention criteria
6	The foundation soils: building-soil relationships, collapse phenomena, consolidation and safety techniques. Techniques of Soil bioengineering
6	The interventions in the foundation
6	The interventions in the masonry structures
8	The interventions in the concrete elements - Restoration of the concrete
6	The interventions in the horizontal elements
6	Interventions in arches and vaults
5	Consolidation, adjustment and structural reinforcement
4	Plant engineering adjustmen
2	Remediation of buildings (asbestos, noxious materials)
4	Restoration for the degradation caused by moisture (ascent, infiltration, condensation)
4	Traditional building techniques in Sicily
4	Low-cost and environmentally sustainable interventions
6	Retrofitting of non-structural elements
Hrs	Practice
10	Analysis of the historical built heritage (preparatory for the intervention) of a center of western Sicily
5	Revision of the exercise products