UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria
ACADEMIC YEAR	2022/2023
MASTER'S DEGREE (MSC)	BUILDING ENGINEERING
SUBJECT	BUILDING RECOVERY AND CONSERVATION DESIGN
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50354-Architettura ed urbanistica
CODE	10096
SCIENTIFIC SECTOR(S)	ICAR/10
HEAD PROFESSOR(S)	CAMPISI TIZIANA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	82
COURSE ACTIVITY (Hrs)	68
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**CAMPISI TIZIANA** Tuesday 9:00 12:00 Ufficio del docente, stanza n.37 del Dipartimento di Architettura (d'ARCH), edificio 8, scala F4, piano secondo

DOCENTE: Prof.ssa TIZIANA CAMPISI

PREREQUISITES	- Elements of traditional stone buildings - wooden floors and coverings - Elements of historical buildings CONSTRUCTION - Technical features of base materials: natural stones, bricks, wood, iron and other metals, mortars, resins, organic and composite materials - Tests and survey on building structures and materials.
LEARNING OUTCOMES	Knowledge and understanding Knowledge regarding: - the most common applications and the principal technical features of historical building materials; - technical and construction elements of traditional architecture; - the identification of most common decay and static failure forms; - technical rules regarding building rehabilitation and historical architecture conservation; - the practice for the survey of existing buildings and for recovery design; - the choice of traditional and / or innovative intervention techniques more effective and appropriate to be taken. The understanding regarding: - skills in interpreting the causes of most common decays and static failures; - the choice of most suitable methods to solve specific functional, construction, or static problems; - the choice of new functions compatible to existing building features; - the choice of intervention techniques to be taken. Applying knowledge and understanding The skills transferred to the student are: - the knowledge of various kind of problems by illustration of different casestudies; - the design exercise enables the student to deal with a real professional case; - the interpretation of the most common structural problems of historical buildings; - the ability to illustrate building knowledge, both geometrical and construction survey, and pathologies analysis; - the ability to suggest the most suitable functional interventions at the level of definitive design, with many executive closer examinations; - the design of appropriate interventions of consolidation and/or structural reinforcing on the existing buildings. Making judgements - The student will have acquired the ability to choose and apply the most suitable verification and/or intervention criteria as regards different questions in the fields of buildings recovery and safeguard. - The student will be able to choose the project intervention of structural rehabilitation in compliance with the current building codes, also respecting the historical value of the building, evaluating the effectiveness of different design solutions. Communication - During the lessons and workshops the student is asked to interact for increase his abilities on general and specific themes; - The student has to present, in progress made, his results during the design exercise, and has to critically discuss any activity, problems and solutions; - The students will have acquired the ability to communicate and express issues concerning the functional and constructive character of the buildings they are studiing; - The student will be able to use each time the most effective communication tools, like suitable graphic drawings, multimedia presentations and threedimensional modelling with up-to-date programs. Learning skills - The student will be asked to understand that theoretic bases and set of rules have to be continuously updated, in connection with the debate on recovery and safeguard interventions. - Based on the gained knowledge, the student will be able to learn from sources from the scientific literature and keep abreast of new techniques and new materials used in the consolidation systems. - During the course, the student will be addressed in order to gain awareness of the importance of a constant update for the maintenance of a good level of knowledge and professionalism.
ASSESSMENT METHODS	Oral examination. The interview concerns the idiscussion of project drawings made by the student during the course: from analysis to plan and design. It is aimed at determining the student's ability to analyse features and criticalities of assigned historical building, to suggest suitable solutions for recovery and enhancement, to correctly answer to questions asked by the board, and the ability to express the teaching content using a technically correct language. The vote is expressed in thirtieths with possible praise, according to the scheme reported at the bottom of the degree program homepage, i.e. "Metodi di valutazione".
EDUCATIONAL OBJECTIVES	The lessons will provide students with general knowledge and in-depth about the architecture historical construction; an updated overview of the most usual

	technical procedures regarding the intervention on existing buildings and the regulations governing the matter. The exercises and laboratory module will provide the student, through the study of cases - type, field surveys and a planning exercise on an existing building, a knowledge of diagnostic techniques and interventions necessary for the recovery and re-utilization of historic buildings.
TEACHING METHODS	Front lessons, design laboratory, technical visits.
SUGGESTED BIBLIOGRAPHY	- Umberto Menicali. I materiali dell'edilizia storica. Tecnologia e impiego dei materiali tradizionali. Edizione: 1992. Collana: Supermanuali. ISBN: 9788843008490 - Zevi L. (a cura di), Il nuovissimo manuale dell'architetto, Mancosu 2008, ISBN: 8887017034 - Landolfo R. (cur.) Losasso M. (cur.) Pinto M. R. (cur.), Innovazione e sostenibilita' negli interventi di riqualificazione edilizia. Best practice per il retrofit e la manutenzione, Alinea editore, 2013. ISBN-10: 8860556910; ISBN-13: 978-8860556912 - P. Davoli, Il recupero energetico ambientale del costruito. Con CD-ROM-Maggioli editore 2010. ISBN-10: 8838757569 - Desogus G., Riqualificare, integrare, sostituire - il miglioramento della prestazione energetica del patrimonio costruito, EdicomEdizioni, Monfalcone, 2018 - J. Gaspari, Trasformare l'involucro. La strategia dell'addizione nel progetto di recupero. Tecnologie per la riqualificazione sostenibile del costruito, Edicom 2012 - Ferrante A., Adeguamento, adattabilità, architettura – teorie e metodi per la riqualificazione architettonica, energetica e ambientale del patrimonio edilizio esistente, Bruno Mondadori, Milano, 2012 - Wallnofer D., Tramonte Silvano U., Benessere e sostenibilità nel recupero edilizio; Hoepli 2019 - Landolfo R. (cur.) Losasso M. (cur.) Pinto M. R. (cur.), Innovazione e sostenibilita' negli interventi di riqualificazione edilizia. Best practice per il retrofit e la manutenzione, Alinea editore, 2013 - Gulli R., Recupero sostenibile del patrimonio costruito in ambito sismico, Edicom editore, 2014 - Dispense didattiche fornite dalla docenza su argomenti svolti a lezione. ISBN-13: 978-8838757563. - Dispense didattiche fornite dalla docenza su argomenti svolti a lezione.

SYLLABUS

Hrs	Frontal teaching
4	Building typologies and features of traditional construction
4	Traditional building materials and construction elements of historical architecture - masonry: knowledge, material and construction techiniques during time; - wooden frameworks: knowledge, material and construction techiniques during time.
2	National and international Technical rules for building rehabilitation
5	Illustration of possible rehabilitation interventions about functional aspects of historical buildings
2	Illustration of possible interventions about construction aspects of historical buildings.
5	Technical innovation and sustainability in compatible rehabilitation intervention. Best practices for energy retrofit and maintenace of traditional architecture
3	Traditional building materials and construction elements of historical architecture - iron, cast iron and steel frameworks: knowledge, material and construction techiniques during time.
3	Traditional building materials and construction elements of historical architecture - reinforced concrete construction systems: knowledge, material and construction techiniques during time.

Hrs	Workshops
5	Technical visits at rehabilitation building yards.
5	Construction details and cost evaluation of predicted building rehabilitation design
5	Definitive/executive design for building's rehabilitation, compatible reuse related to historical features, analysis about construction. Rehabilitation design prosal of new function for the building.
5	Technological and construction detailed design studies
5	Definitive/executive design for building's rehabiltation, compatible reuse related to historical features, analysis about construction. Design and prosal of new technical and construction intervention
5	Definitive/executive design for building's recovery, compatible reuse related to historical features, analysis about construction. Design and prosal of new technic intervention useful to energy quality and certification
5	Definitive/executive design for building's recovery, compatible reuse related to historical features, analysis about construction. Design and prosal of new technic intervention useful to improve structural quality
5	Water, heating, contitioning system detailed studies