UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Fisica e Chimica - Emilio Segrè
ACADEMIC YEAR	2021/2022
MASTER'S DEGREE (MSC)	CULTURAL HERITAGE CONSERVATION AND RESTORATION
SUBJECT	GENERAL AND INORGANIC CHEMISTRY
TYPE OF EDUCATIONAL ACTIVITY	A
AMBIT	50681-Formazione scientifica
CODE	01900
SCIENTIFIC SECTOR(S)	CHIM/03
HEAD PROFESSOR(S)	PELLERITO CLAUDIA Ricercatore Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**PELLERITO CLAUDIA** Thursday 14:00 15:00 studio Pellerito presso edificio 17 , Dipartimento Fisica e Chimica, Viale delle Scienze

DOCENTE: Prof.ssa CLAUDIA PELLERITO

PREREQUISITES	Knowledge required for being admitted to the degree course and verified through the admission test
LEARNING OUTCOMES	Knowledge and ability of understanding Acquisition of the tools: a) to rationalize the structure and behavior of matter at macroscopic and microscopic level, with particular reference to the intermolecular interactions, chemical equilibrium in solution b) to recognize functional groups, of the various classes of compounds and their reactivity ; c) to apply issues and contents in professional field. Capacity 'to apply knowledge and understanding Ability 'to Recognize the matter, chemical compounds and to rationalize and predict the reactivity. Making judgments Capacity 'to rationalize and predict the possible transformations of inorganic compounds due their possible applications in the field of conservation and restoration of cultural heritage. communication skills Ability 'to use the specific language of their own discipline. Capacity 'Learning Capacity 'understanding of reaction mechanisms and their application.
ASSESSMENT METHODS	oral exam. The interview will help to evaluate either by questions posed to simulate real-world applications of teaching content , capacity student to develop the knowledge gained by using them to overcome problems that are placed , and the ability 'to speak with a technically correct language on teaching content. The assessment is expressed in thirtieths . The final assessment, properly graded, will be made on the basis of the following conditions: a) sufficient knowledge of subjects and theories addressed in the course and sufficient explanation ability; sufficient degree of awareness and autonomy in the application of theories to solve chemical problems (rating 18-21); b) Good knowledge of subjects and theories addressed in the course and discrete explanation ability; fair degree of awareness and autonomy in the application of theories to solve chemical problems (rating 22-25); c) Good knowledge of subjects and theories addressed in the course and good explanation ability; good degree of awareness and autonomy in the application of theories to solve chemical problems (rating 26-28); d) Excellent knowledge of subjects and theories addressed in the course and excellent explanation ability; excellent level of awareness and autonomy in the application of theories to solve chemical problems (rating 29-30L).
EDUCATIONAL OBJECTIVES	Provide the basic concepts of general and inorganic chemistry of elements necessary for understand the issues related to the restoration as the degradation and diagnostics
TEACHING METHODS	Teaching takes place in the first half of the year and consists of lectures . An ongoing evaluation, not mandatory, concerns topics covered in the course.
SUGGESTED BIBLIOGRAPHY	-Fondamenti di Chimica Generale-Raymond Chang e Jason Overby, terza edizione a cura di A.Costanzo, R.Galeazzi, P. Turano, McGraw Hill -Fondamenti di chimica, A.M. Manotti Lanfredi, A.Tiripicchio, seconda edizione, Casa Editrice Ambrosiana -F Cacace, MSchiavello:Stechiometria,Ed Libreria ricerche, 1992; -P Giannoccaro, S Doronzo: Elementi di stechiometria; EdiSES, 2nd ed, 2009

SYLLABUS

Hrs	Frontal teaching
3	Atom structure: electronic arrangements in atoms; shell;subshell; atomic orbitals,
2	Periodic low and table.Property trends within the periodic table. Electronics configurations
2	electronegativity, bonding
4	Lewis structures, polarity, isomers, resonance, VSEPR Model, hybridization
4	Molecule structure and interactions, bulk properties of materials. gases, liquids and solids. Phase diagrams
7	solutions and their properties. Colligative properties. Concentration units and calculations. Dilution
10	Chemical equilibrium.Le Chatelier's principle,the ion product of water; Arrhenius, Bronsted,Lewis definition of acids and bases; acid-base neutralization; conjugate acide-base pairs, pH; the strenghts of acids and bases; ionization constants, salts, amphoteric ions, buffer solution, titrations
4	redox reactions

SYLLABUS

Hrs	Frontal teaching
2	chemical kinetics
3	dissolution process, solubility product
3	electrochemical cells, electrolysis
4	Practice exercises