

Vittoria Mucciante

Programme of "Chimica" "Chemistry"		
<ul style="list-style-type: none"> • Code: I3D • Type of course unit: Compulsory • Level of course unit: 1st Cycle in Industrial engineering • Year of study: 1st year; semester: 2nd semester Teacher: Vittoria Mucciante		
Number of ECTS credits: 9 (workload is 90 hours)		
1	Course objectives	The goal of this course is to equip students with the background knowledge and understanding of chemical principles, concepts and terminology. The student will acquire the ability to interconnect the topics discussed with the phenomena related to the behavior of matter and materials. The student should be able to understand and evaluate the chemical, thermodynamic and structure of matter connected with the subsequent teachings of the degree course.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Atomic structure and periodic system. Chemical bonding and molecular structure. Oxidation number, nomenclature and chemical reactions. Chemical thermodynamics. States of matter and state transitions. Systems with two or more components. Chemical equilibria. Chemical kinetics. Acid-base and solution chemistry. Electrochemistry. On successful completion of this module, the student should - have profound knowledge of fundamental concepts in general chemistry - have knowledge and understanding to employ chemical "language" - symbols, formula, nomenclature, chemical equation and units used in chemistry. - understand and explain basic chemical notions (for example mol, orbital, reaction rate, chemical bond, electrolyte, dissociation, hydrolysis, pH, redox potential) and basic chemical laws. - understand the common chemical phenomena, - demonstrate skill in solving qualitative and quantitative problems, and ability to properly expose the knowledge acquired using the appropriate scientific language - demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must have the basic notions of mathematics in particular, elements of differential and integral calculus and notions of physics as acquired in the secondary schools
4	Teaching methods and language	Lectures and exercises. Language: Italian Ref. Text books Theory: M.Schiavello, L. Palmisano "Fondamenti di Chimica" ed. EdiSes D. W.Oxtoby, H.P. Gillis, A. Campion "Chimica Moderna" ed. EdiSes Exercises: P. Silvestroni, F. Rallo "Problemi di Chimica generale" Ed.CEA
5	Assessment methods	Written and oral exam.