



SURFACES AND INTERFACES

Enrollment year	2014/2015
Academic year	2016/2017
Regulations	DM270
Academic discipline	CHIM/07 (FOUNDATIONS OF CHEMISTRY FOR TECHNOLOGIES)
Department	DEPARTMENT OF CHEMISTRY
Course	CHEMISTRY
Curriculum	PERCORSO COMUNE
Year of study	3°
Period	1st semester (01/10/2016 - 20/01/2017)
ECTS	6
Lesson hours	48 lesson hours
Language	ITALIAN
Activity type	ORAL TEST
Teacher	BINI MARCELLA (titolare) - 3 ECTS GHIGNA PAOLO - 3 ECTS
Prerequisites	Basic thermodynamic notions, spectroscopy and crystallography
Learning outcomes	The students must know the main surface properties, the three fundamental equations of surface chemistry and distinguish the different kind of interfaces. The students should be able to describe the main mathematical models of adsorption. In addition, must know the main techniques to study the surface and interfaces of materials
Course contents	Different kinds of interfaces. Liquid-gas interface and surface tension concept and its experimental determination. Surface films on liquid substrates. Solid-liquid-gas interface and contact angle. Main interface phenomena: friction and lubrication, detergency, bagnability, emulsions and aerosols. Solid-gas interface. Physisorption and chemisorption of gases on solids and isothermal models. Eterogenous catalysis by referring to some model reactions. Experimental methods to study the

	surfaces: XPS, SEXAFS, ReflEXAFS, surface diffraction, Crystal Truncation Rods, X-Ray Standing Waves.
Teaching methods	Frontal lessons
Reccomended or required readings	A. W. Adamson, Physical chemistry of surfaces, Wiley & Sons Material given by the teachers
Assessment methods	Oral examination
Further information	
Sustainable development goals - Agenda 2030	\$bl legenda sviluppo sostenibile