CHIM 02/
Academic year: 2016/2017
Faculty: Chemistry Department
Study courses: Physical Chemistry of Materials
Study plans/Curricula: Sistemi Complessi
Type: Affine/Integrative
Total Credits: 6
Didactic Methods: lectures in class and Laboratory activities
Didactic Period: Autumn semester
Exam type: Oral
Professor in charge: Elisabetta Fanizza
Prerequisites bachelor in Chemistry, Material Chemistry, Physical Chemistry
Didactic Methods lectures with ppt presentation and laboratory activities
Course programme : Fundamentals of Surface tension (surface tension definition, Young equation and wettability, capillarity). Surface tension and phase transition: capillary condensation, Kelvin equation, nucleation of solid particles, Ostwald ripening, nucleation of colloidal nanoparticles, Thomson equation. Bottom-Up Synthesis of Nanosized Objects. Surfactants and block copolymer. Gibs adsorption Isotherm and monolayer, Langmuir adsorption isotherm and monolayer.
Diffusion permeability, and light scattering. Regular Solution, Rheology, colloidal stability, continuous and discontinuous phase transition liquid crystals classification and properties, mean field model, polymer solution

PROGRAMME: Lectures: (40 h)
Laboratory activities (15h)
Reference Texts
The Colloidal Domain- D. Fennel Evans;
Introduction to Colloid and Surface Chemistry- Duncan J Shaw;
Colloidal Fundation of Nanoscience- D. Berti, G. Palazzo