

UE Surfaces and interfaces



Level
Baccalaureate
+4



ECTS
3 credits



Component
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)



Semester
Automne

- > **Teaching language(s):** English
- > **Open to exchange students:** Yes
- > **Code d'export Apogée:** PAX7NAAA

Presentation

Description

Goal: As the size of systems decreases, surface effects become more important. The nano- scale is also the scale at which surface effects dominate over bulk effects. This course introduces the main notions to adress the specific properties and the organization of matter at surfaces from a physical, chemical and biological point of view.

Content:

- notions on molecular and surface interactions. The hydrophobic effect
- thermodynamics of surfaces ; surface tension
- capillarity, wetting, contact angle
- surfactants, micelles, self-assemblies and lyotropic phases
- Gibbs monolayers, Langmuir-Blodgett films
- introduction to biologic membranes

Course parts

UE Surfaces and interfaces - CM	Lectures (CM)	14h
UE Surfaces and interfaces - TD	Tutorials (TD)	10h

Recommended prerequisites

Thermodynamics.

Period : Semester 7

Useful info

Place

› Grenoble

Campus

› Grenoble - University campus