

# 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 address 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

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## Recommended prerequisites

Thermodynamics.

**Period** : Semester 7

## Useful info

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### Place

› Grenoble

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### Campus

› Grenoble - University campus