

# UE Nano-safety



Niveau d'étude  
Bac +5



ECTS  
3 crédits



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



Période de  
l'année  
Automne (sept.  
à dec./janv.)

- > **Langue(s) d'enseignement:** Anglais
- > **Ouvert aux étudiants en échange:** Oui
- > **Code d'export Apogée:** PAX9NCAG

## Présentation

### Description

Nanotechnologies give access to new and interesting properties of materials. Applications or potential applications of nanomaterials are today very numerous in research, industrial processes but also everyday life. As a consequence, impact on health and safety of those new substances becomes important. Indeed, assessment on life cycle analysis is a key element of development. This course presents the current knowledge and research regarding the potential risks associated to the development of nanotechnologies, organized around 3 axes:

- Toxicology and ecotoxicology current knowledge, thanks to presentation of latest scientific studies on the subject,
- occupational potential risks : how to manage an emerging risk ? what's mandatory ? what kind of metrology can we use ? what are the best practices in order to prevent impact on health and environment ?
- social perception of nanotechnologies over the world and over different cultures.

### Heures d'enseignement

UE Nano-safety - CM	CM	19,5h
UE Nano-safety - TP	TP	4h

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## Contrôle des connaissances

Examen terminal avec documents

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## Syllabus

Content:

1. Presentation of definitions and applications of nano-objects

International definitions in place, current environment, examples of emissions in different economic activities, field of applications (environment, energy, communication, health, everyday life, ...)

2. Nanotoxicology and ecotoxicology

What's known , what's going on ? what are the barriers of knowledge ?

Key elements for a critical and objective reading of scientific edited publications.

3. Metrology :

Behavior of nano-objects in the air

Technologies and devices for nano-metrology, possibilities and limits

Use of devices during a practical session

4. Regulations or recommandations available

5. Preventing measures: best practices available, as currently deployed in different organisms or industries

**Période** : Semestre 9

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## Infos pratiques

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### Lieu(x) ville

> Grenoble

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### Campus

> Grenoble - Domaine universitaire