

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

Contrôle des connaissances

Examen terminal avec documents

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

Infos pratiques

Lieu(x) ville

> Grenoble

Campus

> Grenoble - Domaine universitaire