



Inorganic materials



Niveau d'étude
BAC +4



ECTS
3 crédits



Composante
Faculté des
Sciences

En bref

- **Date de début des cours:** 1 sept. 2021
- **Langue(s) d'enseignement:** Anglais
- **Méthode d'enseignement:** En présence
- **Organisation de l'enseignement:** Formation initiale
- **Ouvert aux étudiants en échange:** Non

Présentation

Description

This module will be divided into 3 parts:

- General introduction: main classes of materials, relation properties-structure of materials
- Construction and interpretation of phase diagrams: binary (e.g. with metallic and ceramic alloys)
- Construction and interpretation of ternary phase diagrams: variance, ternary eutectic definitions, first and second order peritectic, isothermal section, study of alloy cooling.

Volumes horaires* :

CM : 17h

TD : 8h

Objectifs

To know the main classes of materials

- Major transformations:

o by diffusion: eutectic, peritectic (binary and ternary) eutectoid, peritectoid ...

o without diffusion: martensitic .

- Know how to interpret a binary or ternary diagram to know the conditions for obtaining the desired phases or, conversely, how to avoid the formation of undesirable phases and anticipate the properties and stability of the materials.

- Basics of metallurgy: metals + ceramics

Pré-requis nécessaires

General Chemistry, Basics in Thermodynamics (Bachelor's level : chemistry, physics, physics-chemistry, material sciences)

Contrôle des connaissances

CC intégral

Syllabus



classification of inorganic materials, property-structure relations, metals, metal alloys, ceramics, phase diagram (binary and ternary), phase transformations with and without diffusion

Informations complémentaires

Contact(s) administratif(s) : Secrétariat Master Chimie

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Infos pratiques

Contacts

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Lieu(x)

➤ Montpellier - Triolet