



Faculté des sciences appliquées

FSA

MAPR2700 Introduction to ceramics

[22.5h+15h exercises] 3 credits

This course is taught in the 1st semester

Teacher(s): Francis Delannay
Language: french
Level: 2nd cycle course

Aims

This course presents an introduction to the domain of ceramics and glasses. The emphasis is on the relation between, on the one hand, the (crystalline or amorphous) structure and the microstructure (crystal defects, non-stoichiometry) and, on the other hand, the mechanical, electrical, and magnetic properties.

Content and teaching methods

Content :

- a. Structure of ceramics
- b. Crystalline defects (point defects, linear defects, and two dimensional defects)
- c. Transport of mass and electricity, diffusion processes
- d. Phase equilibria
- e. Microstructure and properties determined by microstructure.

Organisation :

The course is organised on the basis of the method of problem based learning in groups, with alternance of group work, of periods of individual research, and of restructuration lectures.

Other credits in programs

MATR22	Deuxième année du programme conduisant au grade d'ingénieur civil en science des matériaux	(3 credits)	Mandatory
MATR23	Troisième année du programme conduisant au grade d'ingénieur civil en science des matériaux	(3 credits)	Mandatory