High Temperature Alloys

Course code: AHT3 — ECTS Credits: 2

Department	: MSISI	**Lectures**	: 15h00
Lecturers	: G. Hénaff	**Tutorials**	:
Year of study	: 2nd year	**Laboratory sessions**	:
Semester	: 3rd semester	**Project**	:
Assessment method(s)	: 1 written test	**Home works**	:
Language of instruction	: English	**Total hours**	: 15h00
Type of courses	: Compulsory		

Objective: Overview of alloys used in high-temperature applications: Titanium-, Nickel- and Cobalt-based alloys, Intermetallics, Silicides

Prerequisites: Materials Science & Engineering

Content:
Metallurgy and microstructure optimization for improved mechanical properties (tensile, creep, fatigue, dwell-fatigue, crack propagation) of the following classes of alloys:

- Titanium-based alloys
- Nickel-based superalloys (Polycristalline, Directionnaly Solidified and Single Cristalline alloys)
- Cobalt-based alloys
- Intermetallics (TiAl, FeAl alloys, …), Silicides, Niobium based alloys

Recommended reading:
The Superalloys – Fundamental and Applications, R.C. Reed, Cambridge University Press, 2006

BACK