Creep

Course code: ACR3		ECTS Credits: 1	
Department	: MSISI	**Lectures**	: 12h30
Lecturers	: J. Cormier	**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**	: 12h30
Type of courses	: Compulsory		

Objective: Presentation of engineering tools for the design under creep mechanical loading

Prerequisites: None

Content:
This course mainly intends to:
- Introduce the different creep strain mechanisms from a microstructural perspective
- Introduce phenomenological and physical models allowing to describe creep in terms of behavior and life-time (by taking into account the behavior-damage coupling)
- Introduce the consideration of thermal transients and the interactions with other types of loadings (fatigue, oxidation, corrosion)
- Implement the engineering tools allowing taking into account creep in the design of structures (life-time estimation with Larson-Miller type or damage approaches; Chaboche and Dyson/Mc Lean type behavior laws)

The given examples in this course will mainly be the metallic materials used in aeronautical turbines.

Recommended reading: None