

Plasticity-Viscoplasticity

Course code: APV3

ECTS Credits: 2.5

Department	: MSISI	Lectures	: 15h00
Lecturers	: D. Halm	Tutorials	: 15h00
Year of study	: 2 nd year	Laboratory sessions	:
Semester	: 3 rd semester	Project	:
Assessment method(s)	: 1 written test	Home works	:
Language of instruction	: English	Total hours	: 30h00
Type of courses	: Compulsory		

Objective: Learning classical tools to simulate rate-independent plasticity and viscoplasticity

Prerequisites: Solid mechanics

Content:

1. Introduction to nonlinear mechanics
2. Elasto-visco-plastic behaviour
3. Isotropic hardening – Prandtl-Reuss model
4. Kinematic hardening
5. Other plasticity criteria
6. Viscoplasticity

Recommended reading:

J. Lemaitre, J-L. Chaboche, *Mécanique des matériaux solides*, Dunod, 1988

D. François, A. Pineau, A. Zaoui, *Comportement mécanique des matériaux*, Hermes, 1995

J. Besson, G. Cailletaud, J-L. Chaboche, S. Forest, *Mécanique non linéaire des matériaux*, Hermes, 2001

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