MATS9AA MATERIAL SELECTION AND OPTIMIZATION

MATS9AA Material selection and optimization	Duration : 21 hours	ECTS Credits : 2	Semester : S9

Person(s) in charge:

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Keywords:
Choice criteria of materials - optimisation - selection - performances - applications

Prerequisites:

General objective

Be able to select a material and to optimise it for an application.

Program and Contents:

In technological management, the successful integration of a material both in terms of implementation and properties is always a challenge. This course will deal with the art of selecting and optimizing a material for a specific application. At the end of the course, students will be able to:

- write the specifications of a given material
- justify or question its choice by expertise,
- select it from a database that continues to expand,
- improve its performance within a technological field,
- find possible new applications,
- 'carve it to measure' for new applications.

The course will focus on case studies based on concrete problems faced by professionals coming from the world of industry and research. This approach will be replicated by students on projects of their choices.

Abilities:

Levels	Description and operational verbs
Know	Writing specifications
Understand	Optimization of materials (bulk and surface)
Apply	Selecting a material using the CES software
Analyse	Justify or question its choice by expertise
Summarise	Find possible new applications
Assess	Restitution of the comprehensive approach by the students on a project of their choice

Evaluations:

☐ Written Test	☐ Continuous Control	☑ Oral Report	☑ Project	☑ Written Report