

4th YEAR GM – MECHANICAL ENGINEERING COURSES_SEMESTER 8

Practical info

Location(s)

 Toulouse

Advanced heat transferts and fluid flow



ECTS
5 crédits



Hourly volume

Introducing

Objectives

At the end of this course, the student should have understood and will be able to explain the basics allowing to approach a phenomenon involving real (viscous) fluids. He will be able to tackle situations involving more or less complex heat and mass transfers.

The student will also be able to conduct a numerical simulation with Ansys Fluent code.

Necessary prerequisites

Inviscid fluid dynamics (I3ICFT01 & Fluid Mechanics 1)

Introduction to heat transfer (I3ICFT01 & heat Transfer 1)

Practical info

Location(s)



Toulouse

Materials, vibrations and advanced mechanical modeling



ECTS
7 crédits



Hourly volume
100h

Introducing

Objectives

the end of this module, the student will have understood and be able to explain how works a pre-stressed (or preloaded) mechanical system, basis of fracture mechanics and computations of vibrations and transient dynamics

The student will be able to identify mechanical systems that are preloaded, discuss with a specialist of fracture mechanics and carry out a simulation of vibrations and transient dynamics.

Necessary prerequisites

Basis on mechanical design, materials and vibrations

Practical info

Location(s)



Toulouse

Research projects and sports



ECTS

6 crédits



Hourly volume

2h

Introducing

Objectives

The module aims at giving the students a first experience with research through a tutored project in teams (2 to 4 students).

At the end of the module, the student will :

- know how to conduct a bibliography search, synthesise and cite it, for a given scientific topic;
- communicate with rigor in English, orally or through written documents to highlight the research activity performed;
- perform a simple research action in a team organization to generate scientific propositions, then implement and finally assess them

Necessary prerequisites

None

Practical info

Location(s)

 Toulouse

Multidisciplinary industrial project



ECTS
6 crédits



Hourly volume
85h

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain the main principles and definitions of quality management, the importance of health and safety at work, how to assess and prevent risks, eco-design and life-cycle analysis.

The student will be able to develop their capabilities in mechanical design in an industrial project.

Necessary prerequisites

Bachelor in mechanical design

Practical info

Location(s)

 Toulouse

French II



ECTS
3 crédits



Hourly volume

Practical info

Location(s)



Toulouse

Communication in organisations with LV2



ECTS

6 crédits



Hourly volume

Introducing

Objectives

Objectives:

At the end of this module, the student will have understood and be able to explain (main concepts):

- How to answer the demand of the civil society for technical and scientific information
- How to carry out critical analysis in order to give appropriate answers when questioned about such issues
- How to consider the circulation and content of information within the organizations in which they will be hired

The classes given in English will focus on the specific linguistic characteristics of the English used in scientific contexts in order for the students to understand and master them.

The students will also be made aware of the specificities of scientific English as relates to publications in his specific field of research.

Module L 2

The objectives, defined in reference to the CEFR for the 5 language activities, are specific for the language studied (Chinese, German, Spanish) and the level of the student.

They can be consulted on :

<https://moodle.insa-toulouse.fr/course/view.php?id=44>

In certain cases, students may be authorised to follow an English module instead of another language

Necessary prerequisites

Necessary knowledge:

For classes in English : understanding of scientific English

Practical info

Location(s)

 Toulouse

Political sciences semestre 2



ECTS
3 crédits



Hourly volume

Practical info

Location(s)



Toulouse