

## 3rd YEAR IC \_SEMESTER 5 INSA

### Practical info

---

#### Location(s)

 Toulouse

## Mechanics



ECTS  
3 crédits



Hourly volume  
42h

## Practical info

---

### Location(s)

 Toulouse

## Mechanics



ECTS  
3 crédits



Hourly volume  
40h

## Introducing

### Objectives

The student will be expected to understand and be able to explain (main concepts) the mechanics of deformable solids, the notions of stress, linearized strain, displacement fields and elasticity behaviour.

The student should be able to

- This course is intended to provide students with the opportunity to: - analyse the state of stress and strain of a solid under load.
- Calculate the stress state knowing the strain state and vice versa.
- Calculate the state of strain knowing the displacement field.
- Establish the equations for writing the local equilibrium of the solid at any point.
- Translate the boundary conditions of a model into equations.
- Propose a relevant model of a real problem, especially in terms of the boundary conditions.
- Calculate the state of stress, strain and displacement of some simple elasticity problems.
- Switch from stress fields to internal stress fields in the framework of beam theory.

equilibrium, resultants in force and moment.

## Practical info

### Location(s)

 Toulouse

## Necessary prerequisites

Basic mathematical tools, statics of rigid solids,

## Industrialisation process



ECTS  
3 crédits



Hourly volume  
39h

## Introducing

### Objectives

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

- the main types of production processes for mechanical parts,
- principles of industrialization that permit starting a 3D digital model to obtain a real mechanical part (digital process chain),
- the general approach to implement a production process.

The student will be able to:

- make the link between the Product, the Process and the Material associating the form of a part made of a given material to one or more manufacturing processes,
- describe the physical principles of a manufacturing process to produce a mechanical part.
- identify the influencing parameters of a production process

The skills assessed in this course are:

- 1\_5 mastering basic industrial techniques (industrial design, manufacturing ...)
- 3\_3 be able to use generic digital tools (ENT, programming, collaborative work ...)
- 3\_4 Define, build and operate an experiment in a critical view
- 6\_3 Knowing how to use the methods of creativity and demonstrate independence.

The skills deployed in this course are:

- 2\_5 Managing a production tool.

### Necessary prerequisites

- 1) Interpretation a digital model of a mechanical part (3D model).
- 2) Reading the specifications of a mechanical part.

## Practical info

### Location(s)

Toulouse

## Introduction to systems engineering

 ECTS  
3 crédits

 Hourly volume  
37h

## Practical info

---

### Location(s)

 Toulouse

## [FRANCAIS] Matériaux cimentaires et Environnement



ECTS  
3 crédits



Hourly volume

# Introducing

---

## Objectives

Know how Portland cement works (chemistry, hardening, etc.)

Understand the evolution of the development of mechanical performance, as well as the influential parameters.

Understand the basic notions of the physical properties of granular materials and their granulometric characterizations

Know what are the standard pathologies affecting concrete and the associated means of prevention

## Practical info

---

### Location(s)

 Toulouse

## Architecture

 ECTS  
3 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse

## Numerical schemes – PDE model – Theory of sizing (II)

 ECTS  
6 crédits

 Hourly volume  
81h

### Practical info

---

#### Location(s)

 Toulouse



## Heat transfer and fluid mechanics 1



ECTS  
5 crédits



Hourly volume  
67h

## Practical info

---

### Location(s)

 Toulouse

## Eco Design and Engineering

 ECTS  
6 crédits

 Hourly volume  
70h

## Practical info

---

### Location(s)

 Toulouse

## Eco Design and Engineering

 ECTS  
6 crédits

 Hourly volume  
68h

## Introducing

---

### Objectives

The objective of this teaching unit is to increase skills in the design and manufacture of mechanical products.

---

### Necessary prerequisites

2IC CO12  
2IC CT12

## Practical info

---

### Location(s)

 Toulouse

## Engineering and ecological issues

 ECTS  
3 crédits

 Hourly volume  
30h

## Practical info

---

### Location(s)

 Toulouse

## Job search and language

 **ECTS**  
5 crédits

 **Hourly volume**  
37h

# Introducing

## Objectives

Job search modules in French and in English

By the end of these modules, the student is expected to understand how to successfully obtain an internship or job and will grasp the differences in the job-search process between France and English-speaking countries.

The student will be able to:

- ∫ make a personal statement, and start developing a career plan
- ∫ use current research tools (web, online networks, company websites) to conduct a documentary survey on recruitment
- ∫ seek work placements matching his/her objectives and profile
- ∫ find and analyze an English advert in his/her future field
- ∫ adapt his/her CV and cover letter to a specific job application
- ∫ write a CV in English following various country-relevant templates
- ∫ ensure his/her job application meets the company's requirements
- ∫ prepare for an interview (self-knowledge, company awareness, preparation of adequate questions)
- ∫ show adequate degree of proficiency in job search related technical English to be able to take a professional job interview

Second language course (optional ∫ commitment for

years 3 and 4)

The objectives are defined according to European specifications for the five language skills and specific to the various languages proposed - German, Spanish, and Chinese ∫ and to students' levels.

Whenever his/her level is sufficient, the student will be able to:

- ∫ Synthesize and present professional documents
- ∫ give an oral presentation in front of a group
- ∫ take into account the various dimensions of interculturality
- ∫ Analyze a job ad
- ∫ simulate a job interview
- ∫ write a CV and a cover letter in the studies language

Remedial English (upon teachers' decision)

In some specific cases, a remedial English course is offered in replacement of the second language course with the objective of reinforcing the language skills useful for the TOEIC, i.e. reading and listening, grammar and vocabulary.

## Necessary prerequisites

- ∫ TRE (in French): min. C1 level in French ∫ Course not open to exchange students
- ∫ Job Search (in English): min. B1 level in English ∫ Course open to exchange students
- ∫ LV2: min. A2 in the language studied ∫ Course not open to exchange students

# Practical info

---

## Location(s)

 Toulouse

## Improving one's autonomy and building one's own professional project – level 3

 ECTS  
2 crédits

 Hourly volume  
44h

## Practical info

---

### Location(s)

 Toulouse

## Upgrading 3A

 ECTS  
3 crédits

 Hourly volume  
98h

## Practical info

---

### Location(s)

 Toulouse



## Political sciences semester 1

 ECTS  
3 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse

## [FRANCAIS] Challenge – Formation ECIU

 ECTS  
1 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse

## [FRANCAIS] Challenge – Formation ECIU

 ECTS  
2 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse

## [FRANCAIS] Challenge – Formation ECIU

 ECTS  
3 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse

## [FRANCAIS] Challenge – Formation ECIU

 ECTS  
4 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse

## [FRANCAIS] Challenge – Formation ECIU

 ECTS  
5 crédits

 Hourly volume

## Practical info

---

### Location(s)

 Toulouse