Degree competences to which the subject contributes

Specific:
8382. Experience in numerical simulations. Acquisition of fluency in modern numerical simulation tools and their application to multidisciplinary problems engineering and applied sciences.
8383. Interpretation of numerical models. Understanding the applicability and limitations of the various computational techniques.
8384. Experience in programming calculation methods. Ability to acquire training in the development and use of existing computational programs as well as pre and post-processors, knowledge of programming languages and of standard calculation libraries.

Teaching methodology

The course consists of 1.5 hours per week of classroom activity (large size group).

The 1.5 hours in the large size groups are devoted to theoretical lectures, in which the teacher presents the basic concepts and topics of the subject, shows examples and solves exercises.

The rest of weekly hours devoted to laboratory practice.

Support material in the form of a detailed teaching plan is provided using the virtual campus ATENEA: content, program of learning and assessment activities conducted and literature.

Learning objectives of the subject

This module is aimed to help the students identify the important aspects for the preparation of oral presentations, improving their communication skills in the scientific field. It also aims to improve their knowledge of foreign languages.

* To learn the necessary methodology for oral presentations. Identify the key aspects of the presentation of research works. * Perform a rational use of computational techniques for the preparation and presentation of scientific works. * Be able to adapt the work to a deadline, summarizing and organizing complex ideas to clarify them upon their
presentation to an audience, improving their understanding.

* Oral communication: research presentations, attendance to conferences and presentation of articles.
* Interactiveness: Moderation of talks, job interviews

The aim of the module is to help students identify important aspects in preparing scientific papers and articles to improve their own writing skills. * Learn the methodology to perform the structuring of scientific texts. * Identify the key aspects of the preparation of papers and research articles. * Rational use of computational techniques for the preparation and presentation of scientific papers. * Ability to adapt the work to a deadline, summarizing and organizing complex ideas to lighten the face of the ability to understand the audience. * Written communication: Reports, Thesis, articles in journals and conferences.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 125h</th>
<th>Theory classes: 20h</th>
<th>16.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Practical classes: 0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Laboratory classes: 20h</td>
<td>16.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 5h</td>
<td>4.00%</td>
</tr>
<tr>
<td></td>
<td>Self study: 80h</td>
<td>64.00%</td>
</tr>
</tbody>
</table>
## Course introduction

**Learning time:** 7h 11m  
- Theory classes: 3h  
- Self study: 4h 11m

**Description:**  
Presentation of the course, main concepts and assessment mechanisms

**Specific objectives:**  
Provide an overview of the course and the assessment mechanisms

## Communication tools

**Learning time:** 28h 47m  
- Theory classes: 3h  
- Laboratory classes: 9h  
- Self study: 16h 47m

**Description:**  
Students write a short bio-sketch and present themselves in one minute  
Describe the basic concepts and tools in communication

**Specific objectives:**  
Know each other, assess the level of maturity in communication  
Create a common language and set the main goals for communication

## Scientific and Technical Presentations

**Learning time:** 40h 48m  
- Theory classes: 6h  
- Laboratory classes: 11h  
- Self study: 23h 48m

**Description:**  
Best practices for oral presentations

**Specific objectives:**  
Provide with skills in oral communication

## Scientific writing

**Learning time:** 12h  
- Theory classes: 5h  
- Self study: 7h

**Description:**  
Best practices for scientific writing

**Specific objectives:**  
Provide with skills for scientific writing
Introduction to LaTeX

**Description:**
Introduction to LaTeX

**Specific objectives:**
Provide skills to use LaTeX text processor

<table>
<thead>
<tr>
<th>Learning time: 7h 11m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes: 3h</td>
</tr>
<tr>
<td>Self study: 4h 11m</td>
</tr>
</tbody>
</table>

**Qualification system**

The mark of the course is obtained from the ratings of continuous assessment and their corresponding laboratories and/or classroom computers.

Continuous assessment consist in several activities, both individually and in group, of additive and training characteristics, carried out during the year (both in and out of the classroom).

The teachings of the laboratory grade is the average in such activities.

The evaluation tests consist of a part with questions about concepts associated with the learning objectives of the course with regard to knowledge or understanding, and a part with a set of application exercises.

**Regulations for carrying out activities**

Failure to perform a laboratory or continuous assessment activity in the scheduled period will result in a mark of zero in that activity.

**Bibliography**

**Basic:**