Degree competences to which the subject contributes

Specific:
CE1. The ability to solve mathematical problems that may arise in an engineering context. The ability to apply knowledge of linear algebra; geometry; differential geometry; differential and integral calculus; differential and partial differential equations; numerical methods; numerical algorithms; statistics and optimisation

CG8T. THE ABILITY TO ANALYSE AND SYNTHESISE: The ability to think abstractly about the fundamental concepts of a text or exposition and to intelligibly present the result of one’s work.

Teaching methodology

In order to motivate the student, in the beginning of each topic an introduction about the problem faced would be developed, insisting on the tools and methodologies. The subject development could be made by the lecture of a recommended text and doing all of the development made in the blackboard. In order to understand difficult concepts multimedia material developed by the teachers will be used. It is going to be found in Atenea in PDF format. The students have access to a solved collection of problems. Every week the next week exercises are fixed in order to favor the participation. During theory lessons little examples will be implemented too. At the end of each topic, a problems collection will be available in Atenea, destined to the self-evaluation. Observation: Although the documentation is in Catalan this course might be taught in Spanish, if needed.

Learning objectives of the subject

The objective of the subject is to train the future engineer to guarantee the quality levels of products and processes, select suppliers, compare results. Essentially, making decisions under random context.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>Hours medium group:</th>
<th>Self study:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46h</td>
<td>14h</td>
<td>90h</td>
</tr>
<tr>
<td></td>
<td>30.67%</td>
<td>9.33%</td>
<td>60.00%</td>
</tr>
</tbody>
</table>
## 1. Introduction.

**Learning time:** 10h  
Theory classes: 1h  
Self study: 9h

**Description:** 
- 
**Related activities:**

## 2. Patterns of probabilistic behavior.

**Learning time:** 44h  
Theory classes: 15h  
Practical classes: 5h  
Self study: 24h

**Description:**

## 3. Statistical sampling

**Learning time:** 22h  
Theory classes: 6h  
Practical classes: 2h  
Self study: 14h

**Description:**


**Learning time:** 42h  
Theory classes: 12h  
Practical classes: 5h  
Self study: 25h

**Description:**
-
## 5. Lineal model.

**Learning time:** 19h  
Theory classes: 6h  
Practical classes: 1h  
Self study: 12h

**Description:**

## 6. Reliability.

**Learning time:** 13h  
Theory classes: 6h  
Practical classes: 1h  
Self study: 6h

**Description:**
Planning of activities

1. THEORY CLASSES
   Hours: 77h
   Theory classes: 42h
   Self study: 35h

2. PROBLEMS CLASSES
   Hours: 29h
   Practical classes: 14h
   Self study: 15h

3. SELF-ASSESSMENT
   Hours: 18h
   Self study: 18h

4. DIRECTED ACTIVITY
   Hours: 9h
   Self study: 9h

5. CONTINUOUS ASSESSMENT WITH QUESTIONNAIRES
   Hours: 2h
   Self study: 2h

6. PARTIAL EXAM
   Hours: 7h
   Theory classes: 1h 30m
   Self study: 5h 30m

7. FINAL EXAM
   Hours: 8h
   Theory classes: 2h 30m
   Self study: 5h 30m

Qualification system

Continuous evaluation: weigh 10%
Second midterm exam: weigh 40%
Second midterm exam: weigh 40%
Practices: weigh 10%

Any student who cannot attend to the midterm exam (activity 6) or that wants to improve the obtained grade, will have the opportunity to improve that grade by taking an additional written exam that will take place the same day as the final exam (activity 7). The grade obtained in this test will range between 0 and 10, and will replace that of the midterm exam in case it is higher.
Regulations for carrying out activities

In case someone doesn’t attend to an evaluation activity, this activity would be qualified as 0.

Bibliography

Basic:


Complementary:


Others resources:

Hyperlink

http://aprenestadistica.gencat.cat/secundaria/activitats/common/glossari_estadistic.jsp