Present, from a practical point of view, tools and procedures of general use generally used in the resolution of problems in industrial management.

This course aims to:
- Introduce the students the set of knowledge, aptitudes and attitudes which will allow them to solve generic problems of industrial management, known as "problemsolving".
- Provide the students a structured methodology to face the possible problems in their future working life
- Provide the students a wide range of tools and techniques, more intuitive (soft techniques) that the ones exposed on other courses of the degree, to act in each one of the resolution phases of a problem: definition, data gathering, analysis, search of solution, selection of alternatives, implementation.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 75h</th>
<th>Hours medium group: 27h</th>
<th>36.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study: 48h</td>
<td></td>
<td>64.00%</td>
</tr>
</tbody>
</table>
# Content

## UNIT 1. HUMAN FACTOR IN INDUSTRY

**Description:**

**Related activities:**
Practice 1.1 Simulation of a negotiation  
Exposition by the Professor  
Teamwork in class  
Coursework outside the class  
Teamwork outside the class

**Learning time:** 6h  
Theory classes: 1h  
Practical classes: 2h  
Self study: 3h

## UNIT 2. METHODOLOGY FOR THE SELECTION AND PROJECT MANAGEMENT I

**Description:**
PHASE I: DEFINITION  
Stratification: Sources of problems. Tools: brainstorming, affinity diagram, SWOT.  
Exercises. Definition of the Project. Tools: IN-OUT, SIPOC, QFA. Exercises

**Related activities:**
Practice 2.1: Development of the Definition phase of a project.  
Teamwork in class  
Coursework outside class  
Teamwork outside of class  
Exposition by the Professor  
Teamwork in class

**Learning time:** 15h  
Theory classes: 2h  
Practical classes: 7h  
Self study: 6h
# UNIT 3. METHODOLOGY FOR THE SELECTION AND PROJECT MANAGEMENT II

<table>
<thead>
<tr>
<th>Learning time:</th>
<th>14h</th>
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<tbody>
<tr>
<td>Theory classes:</td>
<td>2h</td>
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<tr>
<td>Practical classes:</td>
<td>6h</td>
</tr>
<tr>
<td>Self study:</td>
<td>6h</td>
</tr>
</tbody>
</table>

**Description:**
PHASE II: ANALYSIS OF THE SITUATION
The client. VOC. Metrics. Tools, survey, process map, Pareto, histograms, boxplot. Exercises

**Related activities:**
- Practice 3.1 Development of the Analysis phase of a project
- Exposition by the professor.
- Teamwork in class
- Coursework outside of the class
- Teamwork outside of the class

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# UNIT 4. METHODOLOGY FOR THE SELECTION AND PROJECT MANAGEMENT III

<table>
<thead>
<tr>
<th>Learning time:</th>
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</thead>
<tbody>
<tr>
<td>Theory classes:</td>
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<td>Practical classes:</td>
<td>5h</td>
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<tr>
<td>Self study:</td>
<td>18h</td>
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</table>

**Description:**
PHASE III: ROOT-CAUSE ANALYSIS

**Related activities:**
- Practice 4.1 Development of the ROOT-CAUSE analysis phase of the project
- Exposition by the Professor
- Teamwork in class
- Coursework out of class
- Teamwork out of class
### UNIT 5. METHODOLOGY FOR THE SELECTION AND PROJECT MANAGEMENT IV

<table>
<thead>
<tr>
<th>Learning time:</th>
<th>8h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory classes:</td>
<td>2h</td>
</tr>
<tr>
<td>Practical classes:</td>
<td>6h</td>
</tr>
</tbody>
</table>

**Description:**
PHASE IV: PROPOSED SOLUTIONS
Exercises

**Related activities:**
Practice 5.1 Development of the Proposal Phase of a project
Exposition by the Professor
Teamwork in class
Coursework out of class
Teamwork out of class

### UNIT 6. METHODOLOGY FOR THE SELECTION AND PROJECT MANAGEMENT V

<table>
<thead>
<tr>
<th>Learning time:</th>
<th>8h</th>
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<tbody>
<tr>
<td>Theory classes:</td>
<td>2h</td>
</tr>
<tr>
<td>Practical classes:</td>
<td>6h</td>
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</table>

**Description:**
PHASE V: EXECUTION

**Related activities:**
Practice 6.1 Development of the Execution phase of a project
Exposition by the Professor
Teamwork in class
Coursework out of class
Teamwork out of class
Planning of activities

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PRACTICE 1.1</td>
<td>SIMULATION OF A NEGOTIATION</td>
</tr>
<tr>
<td>PRACTICE 2.1</td>
<td>DEVELOPMENT OF THE DEFINITION PHASE IN A PROJECT</td>
</tr>
<tr>
<td>PRACTICE 3.1</td>
<td>DEVELOPMENT OF THE ANALYSIS PHASE IN A PROJECT</td>
</tr>
<tr>
<td>PRACTICE 4.1</td>
<td>DEVELOPMENT OF THE ROOT-CAUSE ANALYSIS PHASE IN A PROJECT</td>
</tr>
<tr>
<td>PRACTICE 5.1</td>
<td>DEVELOPMENT OF THE PROPOSAL PHASE IN A PROJECT</td>
</tr>
<tr>
<td>PRACTICE 6.1</td>
<td>DEVELOPMENT OF THE EXECUTION PHASE IN A PROJECT</td>
</tr>
<tr>
<td>SMALL-PROJECT</td>
<td>OF AN INDUSTRIAL PROBLEM</td>
</tr>
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</table>

Qualification system

In this course, the work carried out along the course will be particularly valued, in such a way that the mark of the continuous evaluation has a very important weight on the total course mark. The continuous evaluation is based on the qualification of the practices and projects which, either individually or in groups, are carried out by the students. Along the course, at least 10 of these qualifications will be obtained, making up the continuous evaluation mark.

The final exam will consist on a public presentation by teams related to a small-project requested to the students.

Final qualification system:
The final qualification will be obtained from an addition of the partial marks, individual and by teams, corresponding to the continuous evaluation, and the mark related to the evaluation of the fulfillment of the presentation in teams in the final exam.

Regulations for carrying out activities

The final exam is a presentation in teams of a small-project. It does not state any additional rule to the ones natural from a civic behaviour, common sense and respect for other colleagues when doing the presentations.
Bibliography

Basic:


Shapiro, Jeremy F. Modeling the supply chain. 2nd ed. Belmont [etc.]: Thomson Brooks/Cole, cop. 2007. ISBN 049512611X.


Others resources:

Hyperlink

http://www.prothius.com/docencia/?fille=apunt&filtre2=TOI&lang=es&pag=1

Resource