220567 - Research Seminars on Management Engineering

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 732 - OE - Department of Management
Academic year: 2018
Degree: MASTER’S DEGREE IN MANAGEMENT ENGINEERING (Syllabus 2012). (Teaching unit Compulsory)
ECTS credits: 3
Teaching languages: Catalan, Spanish

Teaching staff
Coordinator: JOSE MARÍA SALLÁN LEYES
Others: JOSE MARÍA SALLÁN LEYES

Degree competences to which the subject contributes

Specific:
1. Apply concepts and techniques of descriptive and statistical inference under uncertainty.
2. Apply quantitative and experimental methods for making decisions in situations where intangibles appear
3. Apply theories and inherent principles in the production and logistics area in order to analyze uncertainty complex situations and make decisions using engineering tools.
4. Apply theories and inherent principles in the personal area in order to analyze uncertainty complex situations and make decisions using engineering tools.
5. Apply theories and inherent principles in the general direction of an organization with the aim of analyzing uncertainty complex situations and make decisions using engineering tools.
6. Develop and present a research proposal according to the criteria of the international scientific community.

General:
7. Ability to integrate knowledge and formulate judgments with the aim of making decisions based on information that, with incomplete or limited include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
8. Ability to effectively communicate their findings, knowledge and concluding reasons to skilled and unskilled audiences, clearly and unambiguously.
9. Self-learning capacity to independent continuous training.
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Teaching methodology

The course is divided into three parts:

- Theory classes
- Guided activities class
- Self-study for doing exercises and activities.

In the theory classes, teachers will introduce the theoretical basis of the concepts, methods and results and illustrate them with examples appropriate to facilitate their understanding.

In the guided activity class (in the classroom), teachers guide students in applying theoretical concepts to solve problems, always using critical reasoning. We propose that students solve exercises in and outside the classroom, to promote contact and use the basic tools needed to solve problems.

Students, independently, need to work on the materials provided by teachers and the outcomes of the sessions of exercises/problems, in order to fix and assimilate the concepts.

The teachers provide the curriculum and monitoring of activities (by ATENEA).

Learning objectives of the subject

The course Research Seminars on Management Engineering introduces students to the concepts, principles and fundamentals of scientific research in Management Engineering organization from two points of view: the first presents the research from a methodological point of view (and more theoretical and formal) and a second point of view where cases and particular areas of scientific research in the engineering organization are presented.

Study load

<table>
<thead>
<tr>
<th>Study load</th>
<th>Total learning time: 75h</th>
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<tbody>
<tr>
<td></td>
<td>Hours large group:</td>
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<tr>
<td></td>
<td>Hours medium group:</td>
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<tr>
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<td>Guided activities:</td>
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<td>Self study:</td>
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The grade is obtained through three assignments, with a joint weight of 50%, a research proposal weighting 25% and an exam with a weight of 25%. The exam will be taken the last day of class. Students with nonsatisfactory results on the exam can enhance their grade by doing another exam on the date where the final exam is scheduled. Final grade will be calculated with the best score on the two exams the students have taken. All students can take the second exam.

**Qualification system**

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<th>Content</th>
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<tr>
<td><strong>Module 1: Research Concepts in Management Engineering</strong></td>
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<tr>
<td>Learning time: 75h</td>
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<tr>
<td>Theory classes: 8h</td>
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<tr>
<td>Practical classes: 3h</td>
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<tr>
<td>Guided activities: 16h</td>
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<tr>
<td>Self study : 48h</td>
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**Description:**
- Introduction
- The research question
- Quality indexes for scientific research
- Working with the literature
- Research design
- Data collection
- Data management and analysis
- The challenge of writing the results

**Others resources:**
- Notes posted to the Atenea platform