Training Activity - Workshop on Industrial Problems

ECTS: 6 ECTS

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SUBJECT CONTENTS

Analysis, modelling and simulation of industrial and business problems.

METHODOLOGY

A set of problems will be presented by collaborating companies and / or PhDs related to the industry or business environment.

A list with the problems proposed by the collaborating companies will be elaborated according to the choices of students in the first year of M2i, the proposals made by the students themselves and ensuring that the offer is wide enough to choose for the Master's projects.

For each problem there will be a presentation by the company or teachers, followed by a discussion on the choice of models and calculation techniques most suitable to carry out the numerical simulation.

Students must mathematically formulate the problems, suggest a solution and choose one for their master project.

LANGUAGE USED IN CLASS: Spanish

IS IT COMPULSORY TO ATTEND CLASS? Students can attend via conference system.

SKILLS

Basic:

CG1: To have knowledge that provide a basis or opportunity for originality in developing and / or applying ideas, often within a research context, knowing how to translate industrial needs in terms of R & D in the field of mathematics Industrial.

CG2: To be able to apply the acquired knowledge and abilities to solve problems in new or unfamiliar environments within broader contexts, including the ability to integrate multidisciplinary R & D in the business environment.

CG3: To be able to integrate knowledge in order to state opinions using information that even incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge.

CG4: To have the ability to communicate the findings to specialist and non-specialist audiences in a clear and unambiguous way.

CG5: To have the appropriate learning skills to enable them to continue studying in a way that will be largely self-directed or autonomous, and also to be able to successfully undertake doctoral studies.

Specific:

CE2: To model specific ingredients and make appropriate simplifications in the model to facilitate their numerical treatment, maintaining the degree of accuracy, according to previous requirements.

CE3: To determine if a model of a process is well made and well mathematically formulated from a physical standpoint.

CE4: To be able to select a set of numerical techniques, languages and tools, appropriate to solve a mathematical model.

CE5: To be able to validate and interpret the results, comparing them with visualizations, experimental measurements and functional requirements of the physical engineering system.

CRITERIA FOR THE 1ST ASSESSMENT OPPORTUNITY

It is a compulsory activity for all students enrolled in the M2i.

80% of attendance is required. Each student will submit, by the deadline set by the teachers, two problems summaries:

• One problem selected by the student following a defined scheme (70% of the score) .

• A summary of a second problem selected by the student from 3 problems proposed in a raffle (30% of score).

FURTHER COMMENTS:

Only the classes where the companies give their permission will be recorded. The companies will connect from one of the participant universities or from their company headquarters.