

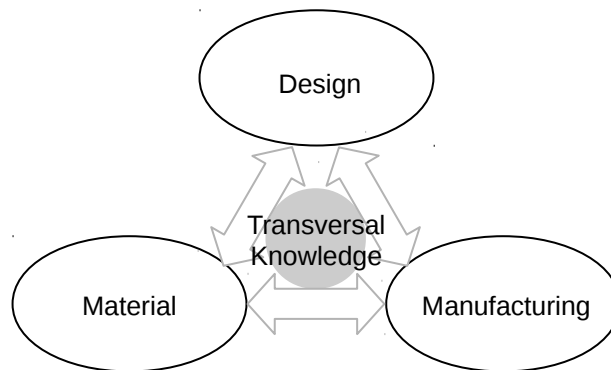
Towards an Integrated Formative Model on Manufacturing Technologies for Students of the Degrees of Industrial Engineering

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1. Introduction – This project states the basis of a coordinate work between teachers of different subjects of the same family. In this case, we are referring to those included in the field of Industrial Engineering. Our main objective is to improve our educational programs regarding to Manufacturing Technologies. As a natural consequence, the formative quality of the students is improved as well. The project pursues the integration of the contents as a whole in the subject programs by highlighting the joints between the different matters, and the agreement of main lines in the educational programs of Industrial Engineering degrees.

In Manufacturing Technologies, the development of skills has an important feature: the transversal connection among them. Design, materials and processes are interconnected by some key factors that must be carefully chosen in order to achieve the defined quality and behaviour in service of a product. Students tend to perceive the contents and skills development as something independent and highly focused on a subject. Nevertheless, in the professional activity of an engineer, the problems are highly complex. This fact can be stated in one skill: **Knowledge of the relations between materials, shapes, processes and costs**. We include this skill in different subjects that deal with one or several of the aforementioned topics. Even though each subject deals with a specific part of the manufacturing problem, our programs account for the connections with other subjects.



2. Methodology – In our group, teachers whose educational profile is different are involved. The first task consists in improving the coordination between subjects related to manufacturing technologies. For this, we have had meetings, short courses and visits to other universities and companies. The second point was the generation and common review of educational resources that were given to the students. After applying the resources, tasks concerning the evaluation were carried out in order to have a continuous enhancement system in which both, the methodology and resources, are questioned and improved.

3. Results – Our work provides the following results:

- Improve the coordination of subjects in the field of Manufacturing Technologies.
- Enhance the transversal teaching skills of the group and promotion of these ones.
- Collaborate with other universities within this topic.
- Better skill development of the students in Manufacturing Technologies.