

DEVELOPMENT OF A MODEL OF CROSS-CURRICULAR COMPETENCIES OF STUDENTS AT THE TECHNICAL UNIVERSITY OF MADRID

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It is known that cross-curricular competences are required for main companies all over the world to be part of our university graduates as technical knowledge does. That is the reason which has led the university structure to include these competences in the every degree curriculo validated since the European Higher Education Area (EHEA) was introduced in the Spanish university context. But the way used for incorporating them has been developed without the necessary guidelines to generate a qualified model.

Therefore, the Technical University of Madrid (UPM) has promoted an innovation project to analyze all both syllabuses graduates and masters, and the very first conclusion has been that there is no curriculo accomplishing with the procedures marked by the EHEA. Those procedures include not only developing of the cross-curricular competences in every syllabus but control and evaluation of their implantation and the improvement results in the students. The way chosen to implant the cross-curricular competences in every degree and master at UPM begins by redefining the competences involved in each subject by reviewing the teaching methodologies really used by the staff. At the Higher Technical School of Naval Architecture and Ocean Engineering (ETSIN), the improvements have started by developing both questionnaires to the staff and the students that have shown the lacks of structure mentioned above.

The 'seven steps way' to improve cross-curricular competences of students at the Technical University of Madrid is being used as a guide to be follow in order to adapt the syllabus competences to the EHEA and then let them ready for any validation. This work will show the real cross-curricular competences situation in some syllabus, the must situation of them such as the grades memories indicate, the gap between both situations that must be solve, and the first steps given to close the gap and to adapt those syllabuses to the memories. All of them will be done having in mind and using different questionnaires, capacities of the staff, possibilities of the subjects, support and facilities in the institution, potential of the students, alternatives of helping formation for professors and students, and the UPM model to implant a specific cross-curricular competence established by the innovation project mentioned. Moreover, it will demonstrate the necessity of change the memories if the subjects or the staff don't allow implanting the cross-curricular competences as it should be, and the way for doing it as the procedures stipulate. The results will be used as a guideline for implanting every selected competence in each course in the Grade chosen and will permit the introduction of the model on it, so that the graduates will be able to achieving the requirements of the companies.

2A way to improve cross-curricular competences of students at the Technical University of Madrid, presented in ICERI2012, the Fifth International Conference on Education, Research and Innovation that has been held in Madrid (Spain) on the 19th to 21st of November, 2012

keywords: [innovation](#), [cross-curricular competencies](#), [model](#).