



## **Effectiveness in Agricultural Engineering: introductory course.**

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A great number of our incoming students do not have the prerequisite knowledge expected from studying Chemistry, Mathematics and Physics in the engineering degree. In some cases, they did not take Chemistry lessons at Secondary School. In other cases, students do not have enough level to follow the lessons at university. If we want to avoid failure in University, all of these students should do some extra work. In some School of Technical University of Madrid, students seek optional introductory courses to acquire the technical basic necessary knowledge to start education in High School, avoiding as far as possible the failure of the first course and in many cases the abandonment. These courses began in Agricultural School in 2005.

The course is given during the month of September and includes a total of 5 ECTS that are distributed among different fundamental subjects: Mathematics (40%), Physics (30%) and Chemistry (30%). Course contents include a review of Secondary School concepts as well as others that the different Departments consider necessary to follow the subject at the first engineering course properly.

In this work the results obtained during the last four years are showed on the students' formation and knowledge of these fundamental subjects prior to the introductory course and their level of participation, beside the degree of students' satisfaction gathered in the surveys. In addition, a case study in Chemistry is presented showing teaching techniques and learning activities used as well as the knowledge and abilities acquired.