

Using technology in mathematical courses: Some possibilities

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Abstract

The use of technology to support the teaching of mathematics in engineering schools has been increasing in recent years, not only restricted to math labs, where certain software was used to develop different practical sessions. The versatility and the power of the current technological tools allow many possibilities of usage and promote new ways of assessing the different competencies to be acquired by the students.

In this paper some examples developed in two Spanish universities with first year students of various Engineering degrees are presented. The examples selected were performed under different assumptions and conditions and using different technological tools.

The study of the Cornu spiral or clothoid, one of the special curves used in the layout of roads, is carried out by the students of Civil Engineering at the University of Salamanca as team work supervised by the teacher. Mathematica has been the software used in the experience.

At the Polytechnic University of Madrid some students of Mechanical Engineering have to research a real problem of their choice and solve it using different methods of systems of linear equations with several procedures implemented with the software MAXIMA.

Students of Computer Sciences of the same University participated in a competition organized by math professors. The students, working in teams of two or three people, developed projects freely chosen by them. The mathematical topics and the technology used are free. The winning team has implemented an Android application for the study of graphs.

Keywords

Maths in engineering schools, Technological tools, Aquisition of competencies