

**JOSÉ GALINDO**

University of Málaga, Spain

**PATRICIA GALINDO**

University of Málaga, Spain

## **TEACHING COMPUTER PROGRAMMING FOR INDUSTRIAL ENGINEERING WITHOUT TEACHER**

### **Abstract:**

The C programming language is widely used in computer and industrial engineering. Because of that, such programming language is also widely used as a language to teach programming to industrial engineering students. In Spain, many universities use this language compulsory in the first year, or even in higher courses. Our experience shows that learning computer programming in four months is an arduous task, but curricula require it. Such learning process is also tough by the fact that many students can not attend classes regularly and, even if they attend, sometimes the class is no longer at the level they require. In this work we develop a series of files in "presentation" format (.ppsx) that allows students to see several explanations about the most complicated programming C topics: functions, arrays, structures, strings, arrays with structures... This multimedia material includes explanations (voice-over), and animations with examples. Students can watch and listen to the explanations whenever they want and wherever they want (tablet, PC, phone...). Surveys made to students reveal that it is also interesting for students who regularly attend classes, and they prefer to use this course material only at home, outside of regular classes.

### **Keywords:**

programming languages, multimedia teaching, autonomous learning

**JEL Classification:** C63, I29, C88