A Multidisciplinary Computer Science Master Program

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ABSTRACT
This paper presents the University of Alcalá attempt to join computer science and information engineering with other fields (business, law, pedagogy, nursery and humanities) in a Master´s Program. The main objective of this approach is to attract graduate students to computer science offering them an alternative way to join its own knowledge and competencies with those in computing skills which are closely related.

Categories and Subject Descriptors
K.3.2 [Computers and Education] Computer and Information Science Education - *Curriculum*.

General Terms
Design, Theory.

Keywords
Computer science education, Information systems education, Curriculum.

1. THE MASTER PROGRAM
Classical approaches to computer engineering integrate mathematics, science and technology courses. More recent trends consider specific curricula, such as software engineering or web engineering that target computer science graduates. Concerning multidisciplinary approaches, many of them lie on a course-level. Our aim was to integrate computer science and information engineering with other areas to offer short-term curricula with high employment potential to its participants.

The Computer Science Master program from the University of Alcalá offers a multidisciplinary syllabus with six different specializations: Software engineering, Information systems, Law and information technologies, Electronic teaching and learning (e-learning), Information and communication technologies (ICT) in humanities and cultural management, and Informatics for clinical and health sciences management. Each specification (except software engineering) has a twofold admission option: An information engineering/computer science degree or a specialization particular degree. For example, candidates with a business or economy degree may access to the Information systems specialization, while graduates in humanities or history are admitted in the ICT in humanities and cultural management specialization. Software engineering path is only accessible to computer science graduates.

Each master specialization is designed as a two year program (120 ECTS credits) comprising: (1) *Curriculum specific* courses that complement students previous knowledge and competencies and set graduates with different degrees to a uniform level, which is required to take common courses. Depending on each specialization, curriculum specific courses range from 12 to 35 credits. Each student must complete curriculum specific courses according to her/his admission degree. For example, in the information systems specialization, business and economy graduates must take curriculum specific courses in ICT fundamentals (12 credits), data management (6 credits), and information systems analysis, modeling and design (6 credits). (2) *Common courses* that shape the core knowledge and competencies of each specialization. All of them are compulsory. (3) *Elective courses* that comprise 12 credits. And (4), a *final thesis* (fig 1).

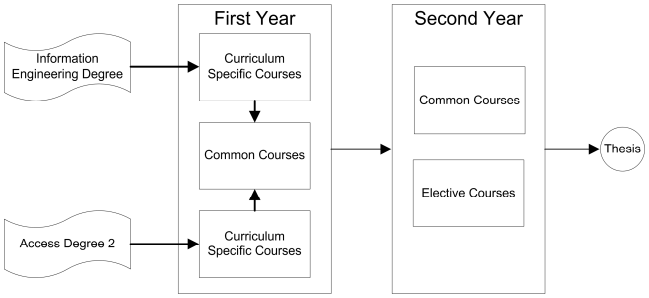

Figure 1. Specialization generic structure

2. INITIAL RESULTS
During the course 2006-2007 two specializations (Law and information technologies, and e-learning) were started with 16 students. 24 new students have enrolled on the master program this course. Our institution expects to start the remaining specializations during the next courses.

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