

Information

Centro de Estudios de Posgrado  
y Formación Continua

C/ Francisco Tomás y Valiente, 2  
Ciudad Universitaria de Cantoblanco  
28049 Madrid

Tel: +34 91 497 4110 / 4057

e-mail: [posgrado.official@uam.es](mailto:posgrado.official@uam.es)

Master in Computer Science and  
Telecommunication Engineering - 90 ECTS  
Doctorate Program

[www.uam.es/estudios/doctorado/default\\_principal.html](http://www.uam.es/estudios/doctorado/default_principal.html)

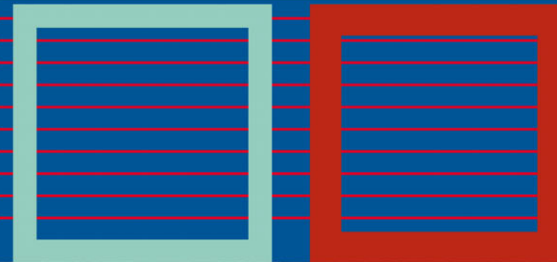
Escuela Politécnica Superior

C/Francisco Tomás y Valiente, 11  
Ciudad Universitaria de Cantoblanco  
28049 Madrid



[www.uam.es/posgrado](http://www.uam.es/posgrado)

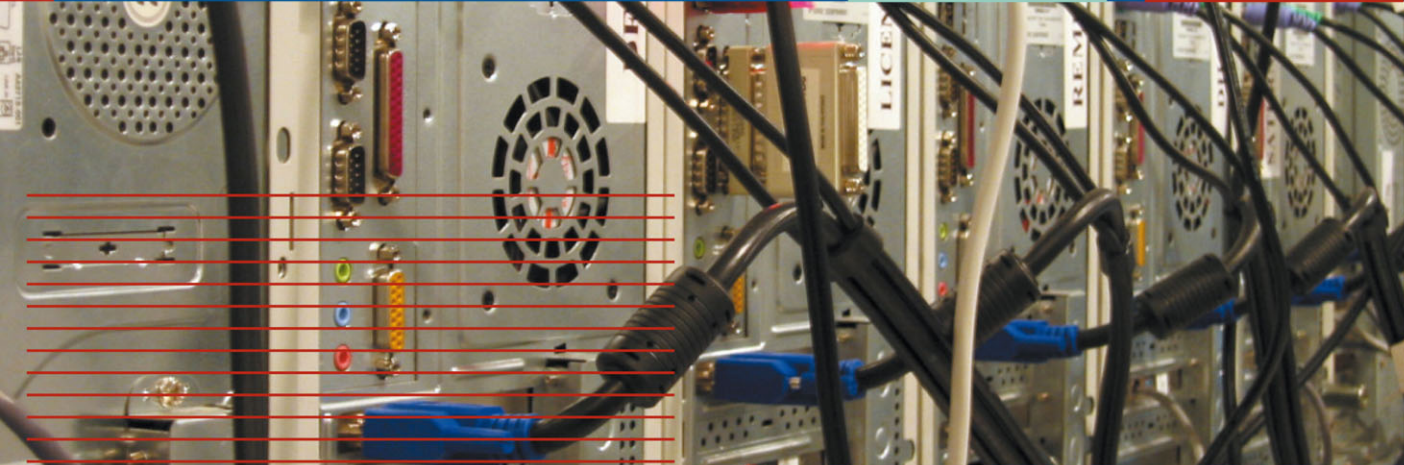
Centro de  
Estudios de Posgrado  
y Formación Continua



Computer  
Science &  
Telecommunication  
Engineering

Postgraduate Program

Universidad Autónoma de Madrid



DISEÑO Y FOTOGRAFÍA: J. A. SEBASTIÁN MAESTRE

Centro de Estudios de Posgrado y Formación Continua

## INTRODUCTION

The **Postgraduate Program in Computer Science and Telecommunication Engineering** of the Escuela Politécnica Superior (EPS) at the Universidad Autónoma de Madrid (UAM) sets out to provide advanced and rigorous academic and professional training which adapts to the needs of society after current graduate study in a wide range of areas that include Computer Science, Electronics and Communications. Therefore, the program has a twofold primary aim:

- To train Professionals with a high degree of scientific and technical education capable to contribute and lead innovation and development projects.
- To train Researchers with the capacity to join competitive research teams, within the diverse disciplines taught in the program and directed toward a number of professional possibilities such as innovation and development project management, research project management, participation in competitive research teams or academic careers.

The Postgraduate Program in Computer Science and Telecommunication Engineering sets out to be both a national and international point of reference in the training of highly qualified researchers and professionals. The focal point of the Program is high-quality training based on good specific knowledge in one area and openness to the synergies created with the complementary features provided by other areas responding to social demands and a European and international profile. As a complement to established curricular teaching, the Postgraduate Program in Computer Science and Telecommunication Engineering offers a stimulating environment that creates possibilities for acquiring specialist knowledge, discussions in university forums and progressive growth of the student as a researcher or specialist professional and innovator. The Program also offers the possibility of developing transversal skills such as group working skills, the development of innovative, critical and independent thinking skills, written and public oral communication skills on advanced subject matter or skills for cooperating in research groups in other fields or disciplines.

Computer Science and Communication Technologies are currently one of the underlying pillars for scientific and technological development. Our society faces the challenge of responding to growing demands for highly qualified innovative professionals in information technologies, electronics and telecommunications. This issue is exacerbated by the rapid evolution of knowledge and skills required in this field. The Postgraduate Program in Computer Science and Telecommunication Engineering responds to these challenges by joining them with a high quality program covering a broad spectrum of the knowledge fields that comprise this scientific and technological area. By combining central core courses with specialisation trajectories taking advantage of the synergies created among the different fields of knowledge, a wide range of study possibilities can be configured. This proposal will enable the student to design an enriching curriculum the final purpose of which is to train researchers and professionals with a solid education while also providing a dynamic and open profile to allow the student to respond to the needs of a technologically advanced society.

## MASTER IN COMPUTER SCIENCE AND TELECOMMUNICATION ENGINEERING

The Master's Degree in Computer Science and Telecommunication Engineering is obtained after completing 90 ECTS credits structured in two first semesters of 30 credits each, where a total of 10 subjects must be passed, plus a third period focused on the preparation of an Master's Thesis of 30 credits, which can be based either on innovative technical development or on initiation into research. In addition to set studies, the student will be expected to participate in Specialised Seminars (first year) and Master's Thesis Work Seminars (third semester). It is also possible obtain up to 12 credits the modality of Tutored Independent Study Seminars (Reading Seminars) and up to two subjects that must hold a minimum of 12 credits in subjects in other official postgraduate programs, with the proviso that this meets with the approval of the tutor.

### Possibility of specific mentions

One option offered during the Master that consists of getting a general training, which after consultation with the tutor, the student can choose any combination of subjects from the first two semesters. In this case, the student can obtain the Master's degree without any mention of a specialisation. As a complement, the Master in Computer Science and Telecommunication Engineering offers the opportunity to add a specialised mention if and when the student follows one of the proposed trajectories. Currently there are 6 on offer:

- Natural computation
- Computational intelligence
- Advanced Information Technologies
- Communications and Networks
- Multimedia signal processing
- Embedded and reconfigurable systems

The different subject matter covered in the Master's Program are attached to one of these trajectories. These specialisations can be opted for either as a **Primary Specialisation (Major)**, which implies a particular emphasis on this area, or as a **Secondary Specialisation (Minor)**, with less emphasis in accordance with the following criteria:

- In order to obtain the mention of a Major at least 6 of the **core** subjects must be studied of one of the proposed trajectories.
- In order to obtain the mention of a Minor at least 4 of the **core** subjects must be studied of one of the proposed trajectories.

In this case after the Master's degree has been completed the mention of the specialist trajectory (or trajectories) chosen will be obtained. The list of relevant subjects is accessible at the website of the Postgraduate Program in Computer Science and Telecommunication Engineering. The subjects that appear as core in one trajectory cannot be considered in an additional specialisation. In general, the different subjects pertaining to the Postgraduate Program in Computer Science and Telecommunication Engineering are taught at the EPS-UAM campus facilities.

### Simultaneity with other Master Programs

The Master in Computer Science and Telecommunication Engineering can be taken simultaneously with the Master in Mathematics and Applications, given by the UAM Department of Mathematics.

## DOCTORATE IN COMPUTER SCIENCE AND TELECOMMUNICATION ENGINEERING

The student's work in the Doctorate in Computer Science and Telecommunications Engineering has an essentially autonomous nature, however it always under the supervision and tutelage of the Thesis Director and in interaction with other EPS professors and students, both in specific lines of student research as well as in other areas and groups. Consequently, and in addition to the work directed towards preparation of the doctoral thesis, the student is expected to participate in seminars, methodological courses and other training activities related to the research activity that take place at the ESP, which include:

- Seminars in Computer Science and Telecommunications Engineering, given mainly by professors from outside the department.
- Training Seminars in Research and Research Disclosure given by doctoral staff whose thesis work is at a more advanced stage.

The specific lines of research at the EPS are the following:

- Automatic Learning
- Advanced Interactive Tools
- Computer-Human Interaction
- Microelectronics, Control and Telematics
- Biological neurocomputation
- Image & Video Processing
- Biometric Signal Processing

### Criteria for directing the thesis

The doctoral thesis shall be prepared under the supervision of a Thesis Director, who must be a professor in the Postgraduate Program. Co-direction will be possible, although at least one of the co-directing professors must be a member of the Postgraduate Program teaching staff.

## STUDENT PROFILE

Although the program gives preference to students with a qualification equivalent to an Engineering Degree in Computer Science or Telecommunication Engineering (or an equivalent qualification), it is also open to other graduate students, especially students from science or other engineering degree courses, with the proviso that they make an effort to complement their graduate training so as to guarantee maximum use of the training offered in this Postgraduate Program.

## ADMISSION, PRE-ENROLMENT AND ENROLMENT

Students interested in the Master's Degree in Computer Science and Telecommunication Engineering must apply for admission to the course by contacting a professor of the Postgraduate Program who is prepared to be their tutor.

Along with the admission application, the student must pre-enrol indicating the subjects in which he/she wishes to enrol.

The UAM has three open admission periods a year, usually in June, September and January, with two enrolment periods usually in October and February. The link below has specific admission, pre-enrolment and enrolment dates for each year and other general information of interest for students interested in UAM Postgraduate courses.

[http://www.uam.es/estudios/doctorado/default\\_principal.html](http://www.uam.es/estudios/doctorado/default_principal.html)