

**EU4M**  
**European Union Master's Course in Mechatronics**  
**and Micro-mechatronic Systems**

**Duration:** 2 years

**Course description:**

Mechatronic and also Micro-Mechatronic Systems cover the development and also the maintenance of products and production systems which consist of a very high level of complexity (cars, airplanes, space laboratories, micro-laboratories, mobile communication systems, self adaptive systems and robotics, process chains).

Important elements of our higher education with 120 credit points according to ECTS:  
Scientific work related to current research plans including enabling design, modelling and simulation.

**Professional Qualification:** interdisciplinary co-operation in groups with the aim of solving complex mechatronic tasks

**Management Qualification:** ability to adapt quickly to various tasks and problems from various fields of engineering

**Adaptability and Flexibility:** ability to communicate easily with people from different countries in different languages

**Qualification in Intercultural Communication:** because of intensive co-operations with industry of each member institution of EU4M-Consortium.

**Guarantee of the High Quality Of Education**

Languages used in lectures are the local languages French and/or German and/or Spanish. Language learning and integration into the society is supported by our TandemPlusSystem, where each third-country student will work together with local/European students and his mentor, a local professor. During the first year at each institution of EU4M-Consortium identical lessons are given to bring the students up to the same level of knowledge. The second year has to be studied at one of the two other institutions (the students have to move to their chosen second years institution); each of the three institutions offers his specialisations in the field and applications of mechatronic and micro-mechatronic systems. Theoretical lessons are given in combination with practical trainees in co-operation with industry and research centres. There will be an approximate supervision ratio of students by professors of 1.

Mobility arrangements between Universidad de Oviedo, Oviedo (E) [www.uniovi.es](http://www.uniovi.es) , Hochschule Karlsruhe (D) [www.hs-karlsruhe.de](http://www.hs-karlsruhe.de) , ENSMM - Besancon (F) [www.ens2m.fr](http://www.ens2m.fr) depending on the language skills and the aims of the specialisation of each students.

For the second year specialisations are offered by:

**Universidad de Oviedo** in Automation, instrumentation, production technologies, Robotics

**ENSMM Besancon** in Automation, Microsystems and Micro-assembly, Micro Robotics

**Karlsruhe University of Applied Sciences** in Automation, Microsystems and hybrid integration, automotive mechatronics, renewable energies.

Thirty credit points are awarded for the Master's Thesis and the final examination. European and third-country students apply directly to the Co-ordinator of the EU4M-Consortium at the HSKA – Karlsruhe; e-mail: [eu4m-consortium@hs-karlsruhe.de](mailto:eu4m-consortium@hs-karlsruhe.de). All applications are examined by the admission and graduation committee. A very good first degree, which is at least equivalent to a three-year bachelor qualification in the areas of mechanical and electrical engineering, industrial engineering or science, is a prerequisite for this program. It is mandatory that students certificate two language skills (French and/or German and/or Spanish) through an appropriately recognized certificate i.e. the TOEFL/TOEIC certificate of at least 450 points or the level B1 Threshold of the Common European Framework.

**Website:** [www.eu4m.eu](http://www.eu4m.eu)

**Partners:**

Karlsruhe University of Applied Sciences, Germany (Co-ordinating Institution)

National Engineering Institute in Mechanics and Micro-Technologies, Besancon, France

University of Oviedo, Spain

**Contact:**

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**Grants:**

852 000 € (15 000 € consortium + 837 000 € scholarships), 2008  
796 000 € (15 000 € consortium + 781 000 € scholarships), 2009