



POLITÉCNICA



I N T E R N A T I O N A L R E L A T I O N S

ERASMUS MUNDUS PROGRAMME ▶



Universidad  
Politécnica  
de Madrid



## INTRODUCTION

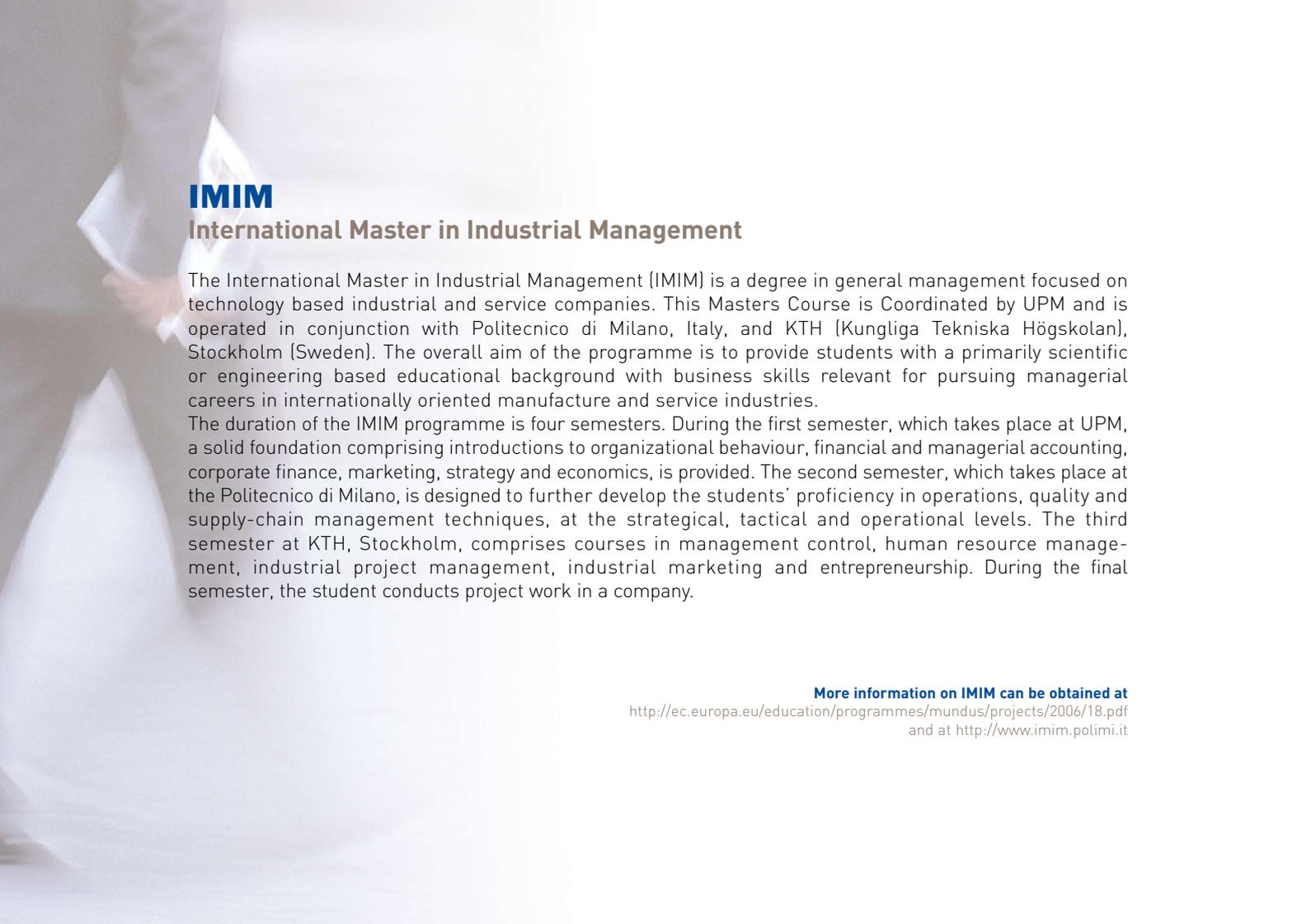
The Technical University of Madrid (UPM, *Universidad Politécnica de Madrid*) is the oldest and largest of the Spanish Technical Universities. UPM has more than 3,000 faculty members, around 38,000 undergraduate students, and approximately 8,000 graduate and PhD students.

UPM's Schools cover most engineering disciplines including Aeronautical, Agronomical, Chemical, Civil, Electrical, Electronic, Environmental, Forestry, Geology, Industrial, Mechanical, Mining, Nuclear, and Naval Engineering, as well as Architecture, Computer Science, Materials Science, and Topography, Geodesy & Cartography. In addition, UPM includes Centers for Physical Education and Sports, Fashion & Design, and Distance Education.

The Erasmus Mundus programme is an inter university mobility post graduate programme which promotes the European Union as a centre of excellence in learning for students from around the world. It supports European top-quality Masters Courses and enhances the visibility and attractiveness of European higher education in third countries. It also provides EU-funded scholarships for third country nationals participating in these Masters Courses, as well as scholarships for EU-nationals studying in third countries.

From the very beginning UPM has played a very active role in the European Union Erasmus Mundus programme, and is currently leading two Erasmus Mundus Masters Courses and participating in five more. In fact, UPM currently is, together with UPC, the university participating in the larger number of Erasmus Mundus Masters Courses in the European Union.

**For more information on the Erasmus Mundus programme, please consult**  
[http://ec.europa.eu/education/programmes/mundus/index\\_en.html](http://ec.europa.eu/education/programmes/mundus/index_en.html)  
**More information on UPM can be obtained at** <http://www.upm.es>



## **IMIM**

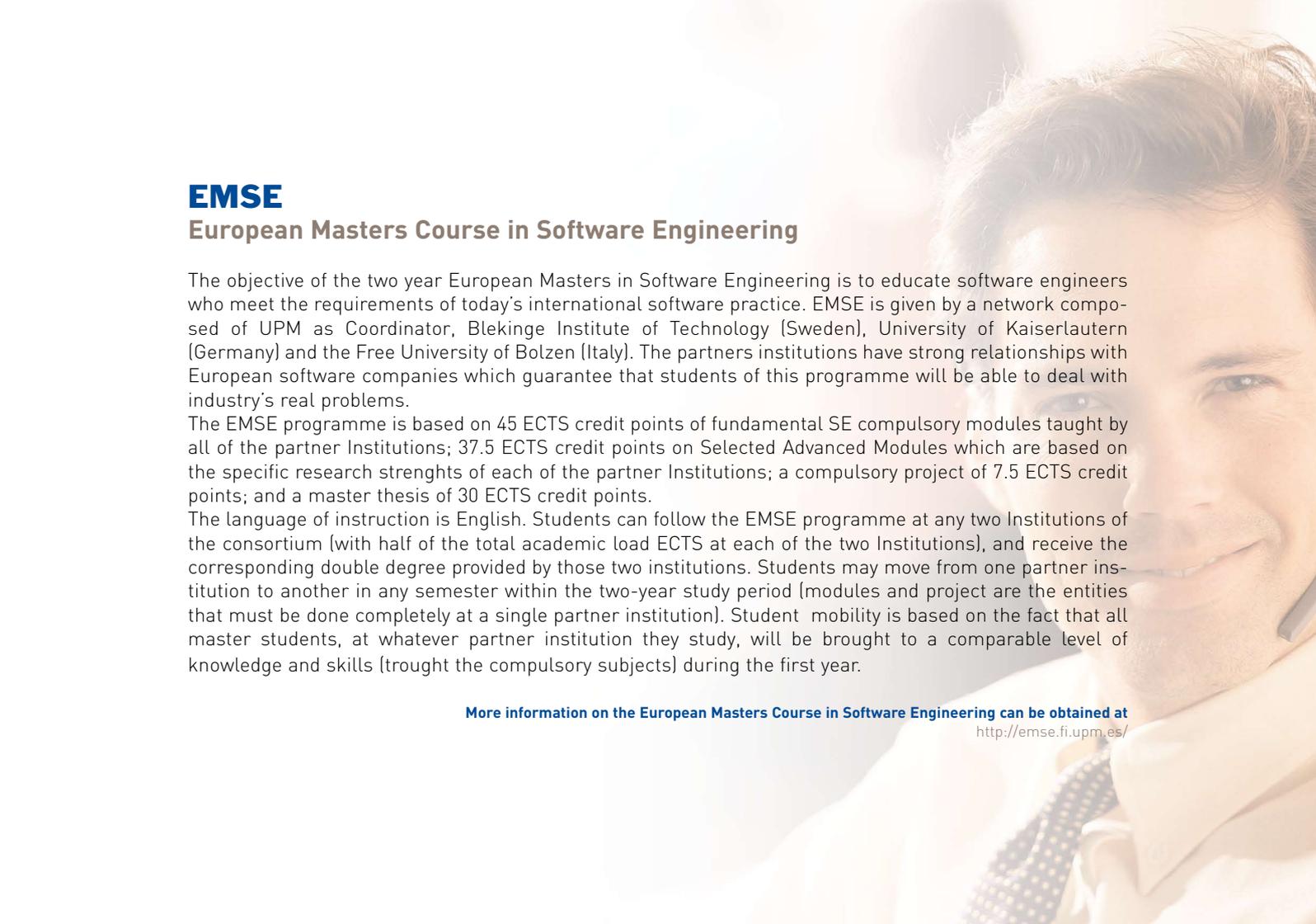
### **International Master in Industrial Management**

The International Master in Industrial Management (IMIM) is a degree in general management focused on technology based industrial and service companies. This Masters Course is Coordinated by UPM and is operated in conjunction with Politecnico di Milano, Italy, and KTH (Kungliga Tekniska Högskolan), Stockholm (Sweden). The overall aim of the programme is to provide students with a primarily scientific or engineering based educational background with business skills relevant for pursuing managerial careers in internationally oriented manufacture and service industries.

The duration of the IMIM programme is four semesters. During the first semester, which takes place at UPM, a solid foundation comprising introductions to organizational behaviour, financial and managerial accounting, corporate finance, marketing, strategy and economics, is provided. The second semester, which takes place at the Politecnico di Milano, is designed to further develop the students' proficiency in operations, quality and supply-chain management techniques, at the strategical, tactical and operational levels. The third semester at KTH, Stockholm, comprises courses in management control, human resource management, industrial project management, industrial marketing and entrepreneurship. During the final semester, the student conducts project work in a company.

**More information on IMIM can be obtained at**

<http://ec.europa.eu/education/programmes/mundus/projects/2006/18.pdf>  
and at <http://www.imim.polimi.it>



## EMSE

### European Masters Course in Software Engineering

The objective of the two year European Masters in Software Engineering is to educate software engineers who meet the requirements of today's international software practice. EMSE is given by a network composed of UPM as Coordinator, Blekinge Institute of Technology (Sweden), University of Kaiserslautern (Germany) and the Free University of Bolzen (Italy). The partner institutions have strong relationships with European software companies which guarantee that students of this programme will be able to deal with industry's real problems.

The EMSE programme is based on 45 ECTS credit points of fundamental SE compulsory modules taught by all of the partner Institutions; 37.5 ECTS credit points on Selected Advanced Modules which are based on the specific research strengths of each of the partner Institutions; a compulsory project of 7.5 ECTS credit points; and a master thesis of 30 ECTS credit points.

The language of instruction is English. Students can follow the EMSE programme at any two Institutions of the consortium (with half of the total academic load ECTS at each of the two Institutions), and receive the corresponding double degree provided by those two institutions. Students may move from one partner institution to another in any semester within the two-year study period (modules and project are the entities that must be done completely at a single partner institution). Student mobility is based on the fact that all master students, at whatever partner institution they study, will be brought to a comparable level of knowledge and skills (through the compulsory subjects) during the first year.

**More information on the European Masters Course in Software Engineering can be obtained at**

<http://emse.fi.upm.es/>

## European Masters Program in Computational Logic

The objective of the two year European Masters Program in Computational Logic is to impart to the student a thorough education comprising both the theoretical and practical knowledge necessary for professional practice in Computational Logic, to give him or her a profound insight into the various disciplines of Computational Logic and to strengthen the student's ability to work according to scientific methods.

The integrated study program is distributed among the Libera Università di Bolzano-Freie Universität Bozen, the Technische Universität Dresden (Coordinator), the Technische Universität Wien, the Universidade Nova de Lisboa and UPM. It is based on common and compulsory foundation modules for about two thirds of the first academic year, which are taught at each of the partner institutions, selected advanced modules (comprising almost two thirds more of another academic year), which are based on the specific research strengths of each of the partner institutions and thus vary from partner to partner, a project of about two months, and a research master thesis of one semester.

Courses are distributed over three semesters. The fourth semester is assigned to the master's thesis and its defence. The language of instruction is English. Mutual recognition of studies is on the basis of modules, the project and the master's thesis, thus students can move any semester from one partner university to another. Each student will study at two of the partner universities for one year each and will receive a double master degree from both universities. The awarded degrees are officially recognized degrees in the issuing countries.

**More information on the European Masters Program in Computational Logic can be obtained at**

<http://ec.europa.eu/education/programmes/mundus/projects/2004/17.pdf>  
and at <http://www.computational-logic.org/>

## **EuMAS**

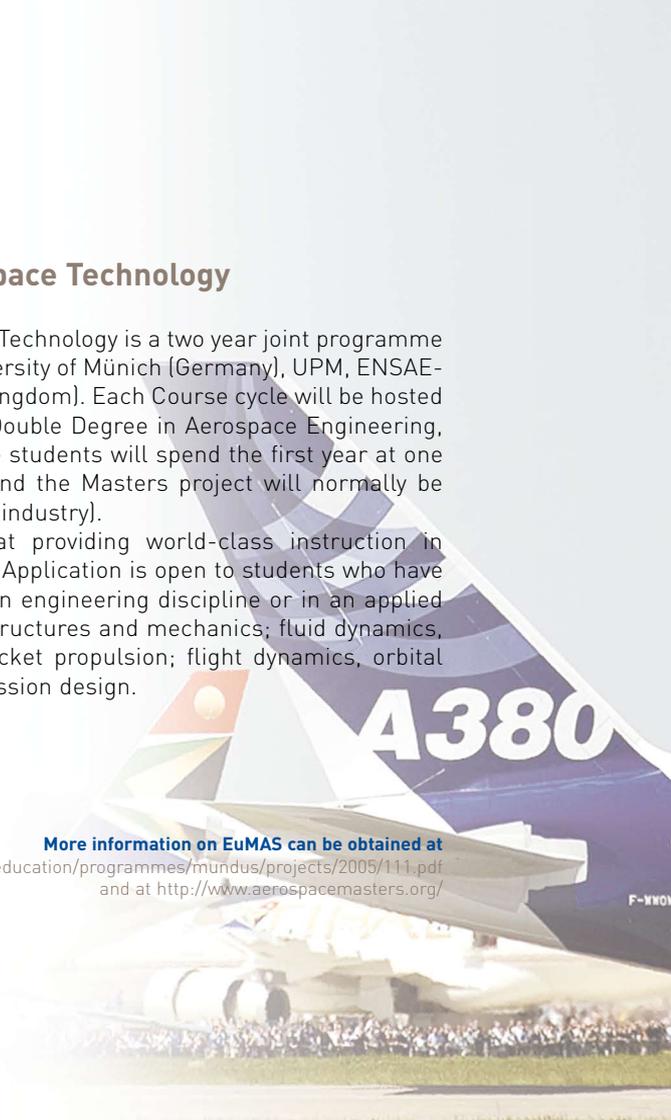
### **European Masters Course in Aeronautics and Space Technology**

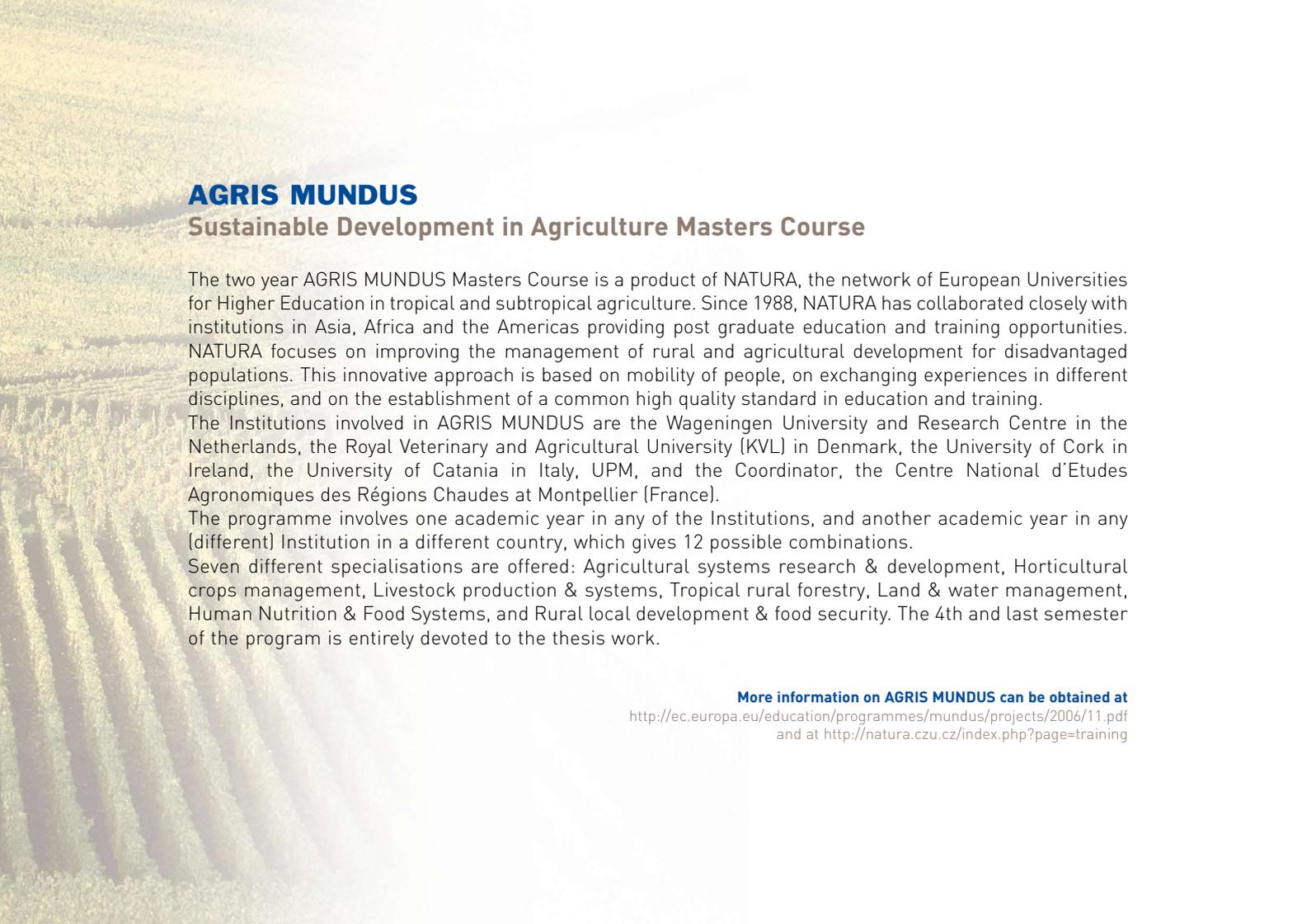
The Erasmus Mundus Masters Course in Aeronautics and Space Technology is a two year joint programme of the University of Pisa (Italy) as Coordinator, the Technical University of Munich (Germany), UPM, ENSAE-Supaero of Toulouse (France), and Cranfield University (United Kingdom). Each Course cycle will be hosted in turn by two of the partner Universities, which will deliver a Double Degree in Aerospace Engineering, fully recognized in Europe and in most countries worldwide. The students will spend the first year at one location, then move to another location for the second year. And the Masters project will normally be carried out at yet a third location (University, research center or industry).

The EuMAS Masters Course includes two options, aimed at providing world-class instruction in Aeronautical Engineering and in Space Technology, respectively. Application is open to students who have completed at least three years of undergraduate education in an engineering discipline or in an applied science. The disciplines studied are within the broad areas of structures and mechanics; fluid dynamics, thermal fluid sciences and aerodynamics; airbreathing and rocket propulsion; flight dynamics, orbital mechanics and control; aircraft and spacecraft systems; and mission design.

**More information on EuMAS can be obtained at**

<http://ec.europa.eu/education/programmes/mundus/projects/2005/111.pdf>  
and at <http://www.aerospacemasters.org/>





## **AGRIS MUNDUS**

### **Sustainable Development in Agriculture Masters Course**

The two year AGRIS MUNDUS Masters Course is a product of NATURA, the network of European Universities for Higher Education in tropical and subtropical agriculture. Since 1988, NATURA has collaborated closely with institutions in Asia, Africa and the Americas providing post graduate education and training opportunities. NATURA focuses on improving the management of rural and agricultural development for disadvantaged populations. This innovative approach is based on mobility of people, on exchanging experiences in different disciplines, and on the establishment of a common high quality standard in education and training.

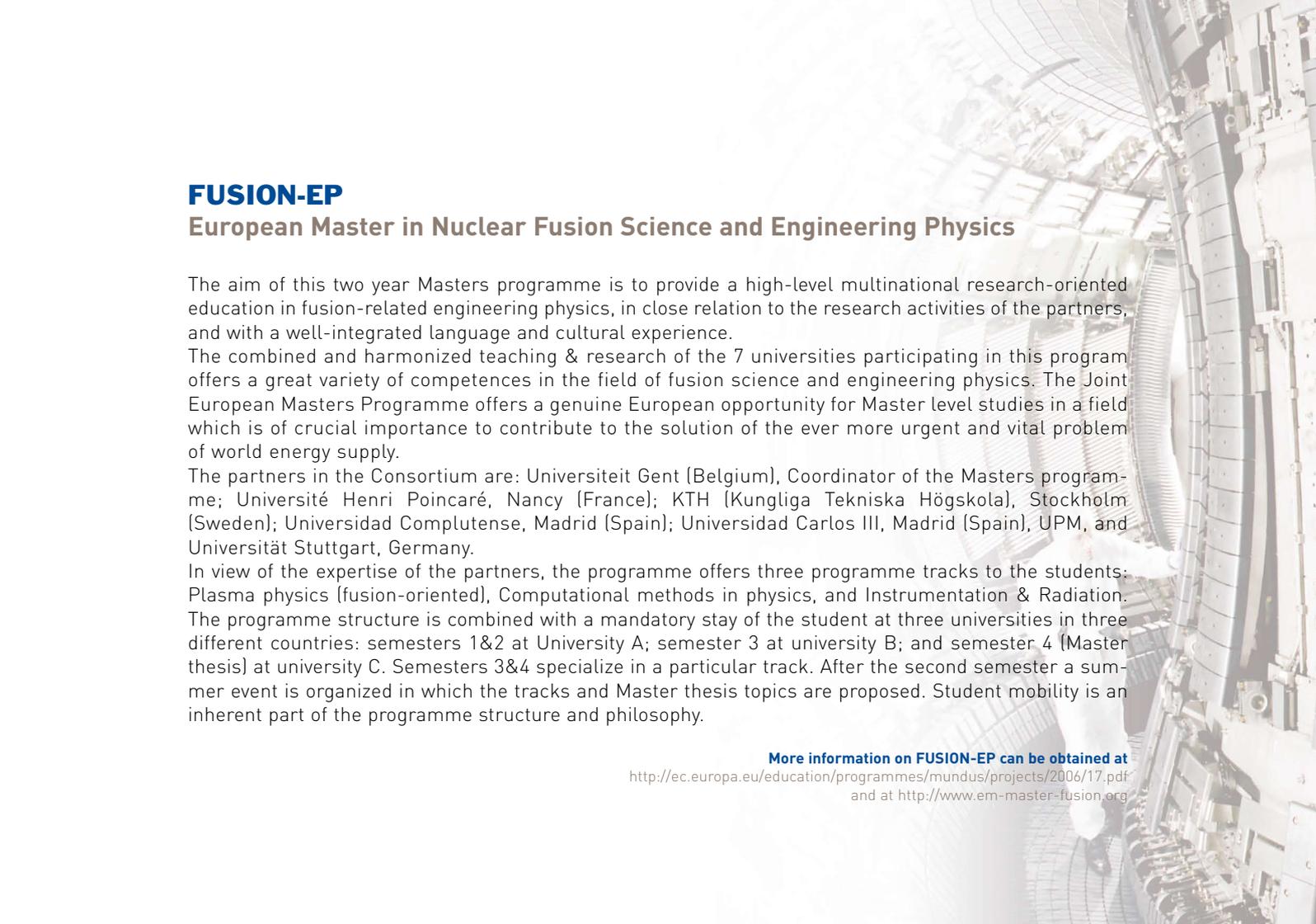
The Institutions involved in AGRIS MUNDUS are the Wageningen University and Research Centre in the Netherlands, the Royal Veterinary and Agricultural University (KVL) in Denmark, the University of Cork in Ireland, the University of Catania in Italy, UPM, and the Coordinator, the Centre National d'Etudes Agronomiques des Régions Chaudes at Montpellier (France).

The programme involves one academic year in any of the Institutions, and another academic year in any (different) Institution in a different country, which gives 12 possible combinations.

Seven different specialisations are offered: Agricultural systems research & development, Horticultural crops management, Livestock production & systems, Tropical rural forestry, Land & water management, Human Nutrition & Food Systems, and Rural local development & food security. The 4th and last semester of the program is entirely devoted to the thesis work.

**More information on AGRIS MUNDUS can be obtained at**

<http://ec.europa.eu/education/programmes/mundus/projects/2006/11.pdf>  
and at <http://natura.czu.cz/index.php?page=training>



## **FUSION-EP**

### **European Master in Nuclear Fusion Science and Engineering Physics**

The aim of this two year Masters programme is to provide a high-level multinational research-oriented education in fusion-related engineering physics, in close relation to the research activities of the partners, and with a well-integrated language and cultural experience.

The combined and harmonized teaching & research of the 7 universities participating in this program offers a great variety of competences in the field of fusion science and engineering physics. The Joint European Masters Programme offers a genuine European opportunity for Master level studies in a field which is of crucial importance to contribute to the solution of the ever more urgent and vital problem of world energy supply.

The partners in the Consortium are: Universiteit Gent (Belgium), Coordinator of the Masters programme; Université Henri Poincaré, Nancy (France); KTH (Kungliga Tekniska Högskola), Stockholm (Sweden); Universidad Complutense, Madrid (Spain); Universidad Carlos III, Madrid (Spain), UPM, and Universität Stuttgart, Germany.

In view of the expertise of the partners, the programme offers three programme tracks to the students: Plasma physics (fusion-oriented), Computational methods in physics, and Instrumentation & Radiation. The programme structure is combined with a mandatory stay of the student at three universities in three different countries: semesters 1&2 at University A; semester 3 at university B; and semester 4 (Master thesis) at university C. Semesters 3&4 specialize in a particular track. After the second semester a summer event is organized in which the tracks and Master thesis topics are proposed. Student mobility is an inherent part of the programme structure and philosophy.

**More information on FUSION-EP can be obtained at**

<http://ec.europa.eu/education/programmes/mundus/projects/2006/17.pdf>

and at <http://www.em-master-fusion.org>

## **ME3**

### **Masters of Science in Management and Engineering of Environment and Energy**

The aim of the ME3 programme is to provide the students with the technical and managerial knowledge and skills required for pursuing managerial careers in the environment and energy areas.

The Consortium of the European joint Masters of Science in Management and Engineering of Environment and Energy is composed of 5 institutions: Escuela Técnica Superior de Ingenieros Industriales from Universidad Politécnica de Madrid (ETSII/UPM), Spain; Ecole Nationale Supérieure des Techniques Industrielles et des Mines de Nantes (EMN), France; Kungliga Tekniska Högskolan (Royal Institute of Technology) (KTH), Sweden; Budapest University of Technology and Economics (BUTE), Hungary; and Queen's University of Belfast (QUB), Northern Ireland, United Kingdom.

The ME3 programme (2 years - 120 ECTS) is composed of an academic period which lasts 3 semesters, and an industrial or research project which covers the last semester.

The first two semesters (part 1 at ETSII/UPM and part 2 at EMN) are well-balanced between Management Sciences and Environmental Process Engineering. To complete these two parts, two options are proposed during the 3rd semester, with a specialised teaching in either Sustainable Energy Engineering (Option 1-KTH) or in Rational Use and Design of Energy Technology (Option 2 - EMN).

Either a research or an industrial project work can be performed, depending on the choice of the student. A research project work can be conducted in one of the Consortium universities, but the student can choose another institute. Industrial projects are geared towards solving company's environmental and/or energy problems and involve advanced engineering and managements tasks.

**More information on ME3 can be obtained at**

<http://webi.emn.fr>





**POLITÉCNICA**

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