

EUROMISE

European study program at the Master's level in Information Systems Engineering

EuroMISE is a study program in Information Systems Engineering (ISE) at the Master's level, which is shared among selected European universities. The entrance requirement of the EuroMISE study program is a 3-year pre-qualifier with specified knowledge contents. The pre-qualifier may either come as a bachelor degree, or may consist of the first three years of a 5-year integrated master study.

The participating universities acknowledge each others study programs with respect to a guaranteed knowledge profile, in coverage (breadth) as well as in quality (depth). Students who are enrolled in one of the participating universities (*the home university*) are permitted to have courses of up to one full year of studies at one of the participating universities (*the visited university*) to be included in the study program at their home university. Students are supposed to stay with their visited university for a minimum of one semester.

Students will be granted the appropriate master degree of their home university. In a diploma supplement will be specified that they have followed the EuroMISE study program. All of the participating universities offer an elective study program named EuroMISE or similar in their study catalogue.

All of the participating universities have bilateral agreements on student exchange under the Erasmus student exchange program. EuroMISE students will visit one of the participating universities under the Erasmus agreement.

The participating universities are, as of spring 2009:

[Delft University of Technology](#) The Netherlands [Faculty of Electrical Engineering, Mathematics, and Computer Science](#)

[The Norwegian University of Science and Technology](#) (NTNU) Trondheim, Norway [Department of Computer and Information Science](#) (IDI)

[Politecnico di Milano](#) Milano, Italy [Dipartimento di Elettronica e Informazione](#) (DEI)

[The Royal Institute of Technology](#) (KTH) Stockholm, Sweden [School of Information and Communication Technology](#) (ICT)

[Technical University of Catalonia](#) Barcelona, Spain [Barcelona School of Informatics](#) (FIB)

[University of Twente](#) The Netherlands [Electrical Engineering, Mathematics and Computer Science](#)

[University Paris 1 Panthéon Sorbonne University](#) Paris, France [Mathematics and Informatics department](#)

[Universitat Politècnica de València](#) [Departament de Sistemes Informàtics i Computació](#) (DSIC)

Theme overview

Today's organisations are vitally dependent on their information systems, and the high demands placed on these systems require skilled technical specialists. *Information Systems Engineering* graduates are experts and can be found at all stages of a distributed information system's lifecycle (requirement analysis, architecture design, realisation and maintenance). The information systems of today's organisations manage large volumes of internal information, including structured data, multimedia data or geographic information. These systems encompass workflow, groupware and e business processes and are often distributed across organisational units and physical locations. Information system engineers are able to combine and configure basic software components, such as database management systems, transaction processing monitors, workflow management systems and middleware. In short, they know how to define a system on which an organisation can truly depend without giving rise to any vulnerabilities.

Student exchange arrangements

The EuroMISE study program provides an educational framework that guarantees the overall quality of a shared European MSc in ISE. The educational set-up provides for organized student exchange within a network of European Universities. In Europe there is already a widespread student exchange among universities within the framework of the Erasmus program. The proposed MSc in ISE is an extension of the current exchange arrangements.

Entrance requirements

EuroMISE Students must have a sufficient bachelor level education from one of the participating universities. This can either be a formal BSc, or the first three years of an integrated professional 5-year MSc study in IT, such as found at many technical universities in Europe. The EuroMISE entrance requirements define a transfer-between-universities level of knowledge.

Strict requirements are put on the mathematical proficiency of the students as well as on their ICT-knowledge, while there are no strict requirements for other knowledge areas.

- Students should have at least 30 ECTS credits in mathematical courses. These would include courses in discrete mathematics, logic, analysis, calculus, algebra, statistics, etc.
- Students should have at least 60 ECTS credits in ICT courses. These would include courses in software engineering, programming, data bases, information systems engineering, IT and society, human computer interaction, security, telecommunication, operating systems, etc.
- Students should have at least 120 ECTS credits in total in mathematical and ICT courses.
- Students should have a basic knowledge and competence in analysis, design and implementation of ICT systems.

In addition, it is recommended that students have basic courses in business administration and project management, but this is not a mandatory requirement.

Master studies framework

Total 120 credits.

- Thesis can vary in size between 20-60 ECTS.
- ISE courses 30-60 ECTS.
- Cross competence IT courses 5-30 ECTS.
- Cultural Adaption Courses and others 5-15 ECTS.

Core ISE courses

- ISE Modelling (e.g., titles such as Requirements analysis/engineering, Modelling of information systems).
- Advanced database topics.
- Advanced software engineering (e.g., advanced software engineering, Software architectures).

ISE courses

- ERP Systems Engineering
- Method Engineering & CASE/CAME
- Enterprise Knowledge Modelling & Management
- IS Project Management & Quality Assurance
- Cooperation Technology, Collaborative technologies
- Advanced ISE methods
- Web Databases
- Datawarehouses and data mining
- Web intelligence
- Knowledge management
- Enterprise modelling and enterprise architecture
- IT Management, IT governance, Enterprise Architecture

ICT courses in the subject area

- Interoperability of applications
- Components & Services based Engineering
- Communication services and Networks
- Applications areas like e-commerce, e-government
- Service-oriented Architecture (SOA)

Project work and thesis

The master study program may also comprise a group project in practical design of an information system, ranging from 1/4-1/2 semester. Some bachelor level programs also have such projects, and it should therefore not be required that students do these projects twice.

Furthermore all programs seem to finish with a final project (thesis), however the duration varies from 20 to 60 credits.

English language

A good working knowledge of the English language is required.

Participation in the program, general rules

Those adhering to the following requirements can participate in the proposed joint study program:

- Students who participate in the program are expected to study at another university than their home university (where they are enrolled) for one or two semesters (maximum one semester of the two master level years are at another university than their bachelor level university). They are expected to do at least one of their master level years at their home university.
- There are limitations on student movements defined by availability of Erasmus students exchange slots.

Implementation at Universitat Politècnica de Catalunya

The courses related to the EUROMISE which will be delivered in English during the academic year 2009/10 will be:

Fall semester: Software Engineering I (6 ECTS)

Programming Project (4.8 ECTS)

Computer Architecture (7.2 ECTS)

Artificial Intelligence (7.2 ECTS)

Operating Systems Project (6.0 ECTS)

Design of Web-Based Systems (6 ECTS)

Design and Administration of Databases (6 ECTS)

Engineering of Requirements (6 ECTS)

Security in Information Technology Systems (6 ECTS)

Social and Environmental Aspects of IT (6 ECTS)

Spring semester: Software Engineering II (7.2 ECTS)

Software Engineering and Databases Project (6.0 ECTS)

Information Skills in Information Technology (1.2 ECTS)

Compilers (7.2 ECTS)

Computer Networks (7.2 ECTS)