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**MathMods Programme**

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ERASMUS MUNDUS



BARCELONA · NICE · HAMBURG · L'AQUILA · GDANSK

Erasmus Mundus MSc Course in

# MathMods

Mathematical Modelling

in Engineering:

Theory, Numerics, Applications



## What is Erasmus Mundus?

Erasmus Mundus is a co-operation and mobility programme in the field of higher education which promotes the European Union as a *worldwide* centre of excellence in learning. The programme supports European top-quality master's courses and enhances the visibility and attractiveness of European higher education in *third countries*, providing EU-funded scholarships.

## What is MathMods Programme?

MathMods is a two year MSc programme (120 ECTS) within 5 European universities, providing students with a cross cultural education while getting acquainted with both theory and applications of mathematical modelling in engineering.

## Aims

Mathematical modelling lies at the heart of most current technological innovations and has become a fundamental tool in many fields of engineering. Essentially multidisciplinary in its applications, mathematical modelling and simulation is in its own right a key technology which is bound to increase its presence within efficient industries and businesses. The proposed programme reflects this multidisciplinary, drawing on the unifying mathematical aspects from the various and often separate engineering disciplines.

## Consortium

MathMods is a consortium of five European universities coordinated by the

- University of L'Aquila in Italy (**UAQ**) and involving the following institutions:
- Autonomous University of Barcelona in Catalonia, Spain (**UAB**)
- University of Hamburg in Germany (**UHH**)
- Gdansk University of Technology in Poland (**GUT**)
- University of Nice - Sophia Antipolis in France (**UNSA**).

## Study Programme

MathMods MSc course is divided into four semesters. Each semester totals 30 ECTS credits.

Mobility scheme will involve at least two institutions.

The **FIRST YEAR** is common for all students. This will guarantee an equal knowledge platform for all of them.

The **SECOND YEAR** will be divided into five branches, which reflect the partners' field of excellence:

- *Advanced computational methods in material science*
- *Mathematical modelling applications to biology and finance*
- *Modelling and simulation of electronic devices*
- *Modelling, simulation, and optimization of complex systems*
- *Stochastic modelling and optimization.*

First Semester  
**THEORY**  
at UAQ, Italy

Second Semester  
**NUMERICS**  
at UNSA, France

Third Semester  
**APPLICATIONS**  
at 1 of the 5 institutions

Fourth Semester  
**MASTER THESIS**  
at 1 of the 5 institutions

## Language

The language of the whole programme will be exclusively English at each of the five universities. Students will also have to attend a local language course during the semester they will be spending at each partner institution.

## How to Apply?

The application to MathMods programme and the submission of all the required documents must be made online. Applicants will find instructions and the link to the form on MathMods web-site: [www.mathmods.eu](http://www.mathmods.eu)

## Requirements

Applicants must have obtained a recognized Bachelor's Degree (BS, BSc, SB, etc.) – or a degree at the level of a Bachelor's Degree, for instance its equivalent from a college, university, or technical school of high standing, or 180 ECTS credits in the European system – in Mathematics, Applied Mathematics, Physics, Engineering with a large background in Mathematics.

All applicants whose native language is not English are required to prove a satisfactory level of spoken and written English, certified by TOEFL (550 points), IELTS (6.0 points) or equivalent.

## Scholarships

Several Erasmus Mundus scholarships are offered by the European Commission to non European students. These scholarships amount to a maximum of EUR 42,000.00 to cover the two year expenses and are granted to the most promising applicants.  
A limited number of MathMods Consortium scholarships are also available for European students.

## Deadlines

### Deadlines for Scholarships

- The applications for Erasmus Mundus scholarships will close on **15 January 2009**.
- The applications for MathMods Consortium Scholarships will close on **15 May 2009**.

### Deadlines for Registration

- For Third Countries applicants the online application will close on **15 May 2009**.
- For European Applicants the online application will close on **15 May 2009**.