Mathematical models and techniques

Mathematics is the hidden technology behind nearly all aspects of modern life. Without mathematical tools, there would be no internet search engines, no weather forecast, no digital photography, no security in banking. Mathematical models and techniques play an important role in automatic pilot technologies, the design of quieter and more fuel-efficient cars and aeroplanes, the optimisation of wind farms, financial products, the development of drugs, medical scanners, and much, much more. At first sight, these applications have little in common, but they all process a large amount of data or are based on complex models that require large computer resources and advanced algorithms. Mathematics is becoming critical in many applications because of increasing model complexity and higher demands from customers and the environment.

Mathematical tools for engineers

The Master of Science in Mathematical Engineering at KU Leuven offers a broad and profound knowledge of mathematical tools for engineers. You will have the opportunity to develop your skills to design and use novel mathematical engineering techniques and conduct your own research under the guidance of top experts well known in the international research community.

Programme

For detailed descriptions of the courses and for the course timetable, please consult [www.kuleuven.be/ma/mmael/programme](http://www.kuleuven.be/ma/mmael/programme).

Application procedure

Master of Science in Mathematical Engineering

Your profile
This master’s programme is designed for holders of a bachelor’s degree with a basic training in mathematics and engineering sciences who are interested in mastering an engineering approach that bridges mathematical models and design methods in industry and services. By the end of the programme you will have acquired expertise in modelling, data analysis, and numerical simulation to:
- develop algorithms and software for complex simulations and optimisation,
- use these techniques for industrial and medical applications as well as services,
- design a virtual prototype of a system or a product,
- independently solve a problem in a research laboratory or a business context.

Admission requirements
To be eligible for Master of Mathematical Engineering you must have obtained an academic bachelor’s degree in the field of engineering or a bachelor or master in mathematics or physics. You also have to provide evidence of your English proficiency.

Good knowledge of the English language is essential. Unless you are of Anglo-Saxon origin, you will be asked to submit a TOEFL or IELTS certificate. If you have already completed an English-language academic programme at an Anglo-Saxon university, your degree will be considered sufficient proof of your English proficiency.

Programme admission: www.kuleuven.be/ma/mmael
General admission: www.kuleuven.be/admissions

Tuition fees
The tuition fee for the 2016-2017 academic year is € 890 for EEA students and € 6000 for non-EEA students. The tuition fees for future academic years can be slightly higher as a result of indexation. Please consult the website for the most recent information: www.kuleuven.be/tuitionfees.

Opportunities for student exchange
The Erasmus programme gives you the opportunity to complete one or two semesters at a participating European university. Student exchange agreements are also in place with a number of Japanese and American universities.

We encourage you to learn more about industrial and research internships abroad by contacting our Internship Coordinator. These studying abroad opportunities and internships are complemented by the short summer courses offered via the Board of European Students of Technology (BEST) network.

Career perspectives
Many small, dynamic, young companies are active in the field of mathematical engineering. But even big players in materials, chemistry, automotive, aerospace, biomedical industries, as well as finance, are increasingly interested in mathematical engineering thanks to the ever-increasing complexity of mathematical models and more stringent environmental standards and comfort expectations. Many of our young graduates start their careers in the R&D departments of high-tech companies or matriculate into one of the university’s PhD programmes.

Contact:
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