



# KIC InnoEnergy Master School

## MSc ENTECH – ENERGY TECHNOLOGIES

**MSc ENTECH is a programme for engineering students wanting to create the energy technologies of the future. With its interdisciplinary set-up, ENTECH brings together students and teachers from different engineering backgrounds united in this aim. Its broad-based education in engineering leads to a variety of key specialisations in the energy industry. Together with classes dedicated to innovation and entrepreneurship, the programme provides you with an excellent background for meeting future energy challenges.**

### PROGRAMME DESCRIPTION

Meeting the challenges of future energy technologies – reliability, sustainability, efficiency and environmental compatibility – requires well-trained engineers with a profound knowledge of all the exciting opportunities available to us. MSc ENTECH gives you this know-how. In contrast to the engineering education of the past, which was typically restricted to single aspects like electrical or mechanical, ENTECH focuses on delivering the interdisciplinary knowledge you need to cope with the complexity of future energy systems. It gives you a wide range of hands-on opportunities to apply your knowledge and skills both in theory and in practice. What's more, the programme strongly emphasises integrating creative,

entrepreneurial and leadership skills to foster the creation of new ideas and turn them into innovative products, services, processes and policies. MSc ENTECH equips you for meeting tough challenges in the design, development, operation and analysis of future energy technologies. At the same time you gain:

- In-depth knowledge in two fields of energy engineering
- A profound knowledge of the overall field
- The ability to work in interdisciplinary teams
- Skills in project management and innovation

This enables you to:

- Design new processes and energy systems
- Develop new technologies beyond current state-of-the-art
- Evaluate the feasibility and impact of new technologies
- Implement developed ideas

### PROGRAMME CONTENT

ENTECH's scope is energy technologies in a broad sense. As students come from different backgrounds, the initial training (Basic Courses) will bring you all to a common level of energy engineering knowledge. This requires a modular class structure and a 'Learning Agreement' developed on an individual student basis. Subsequently, and based on the

respective basic courses, several specialisations (Main Subjects) are offered. Topics, which differ between the collaborating universities, cover fields like electrical energy systems, transport and storage of energy, energy conversion, energy economics and energy system analysis. You select two main subjects to pursue in depth. Possible specialisations within MSc ENTECH include:

- Thermal Power Plants
- Energy in Buildings
- Chemical Energy Carriers
- Decentralised Power Supply and Grid Integration
- Nuclear and Fusion Technology
- Energy Economics and Informatics
- Renewable Energy and Energy Storage
- Utility Facilities

Special emphasis is put on innovation and management processes; you learn the basics of product development and how innovations can be realised in companies (Innovation & Entrepreneurship). Topics dealt with in project work and later on, particularly in the master thesis, are primarily industrial issues of practical relevance, or part of a larger research project carried out together with an industrial partner. Your studies also cover economic as well as legal and ecological aspects of different energy technologies and their implementation.

A complementary training programme, running throughout your two years of study, provides a learning process to master personal and social skills. It is specifically designed to learn how to handle the complex issues businesses deal with today, including increasing cross-functional, -cultural, -country, or -company cooperation, plus fast-changing requirements and know-how.

According to European Institute of Innovation Technology (EIT) criteria, the programme envisages mobility from one university to another after the first study year. The university you choose for the first year is your home institution. You then continue your second year at one of the partner institutions according to the chosen major.

The four partner universities cooperating in ENTECH are:

- Karlsruhe Institute of Technology (KIT), Germany (also the coordinating

institution)

- Instituto Superior Técnico (IST), Portugal
- Uppsala University (UU), Sweden
- Grenoble Institute of Technology (INP), France

KIT and IST offer full first-study year entry points as well as the second-year exit points. To broaden the possibilities within ENTECH, UU and Grenoble INP provide selected second-year specialisations.

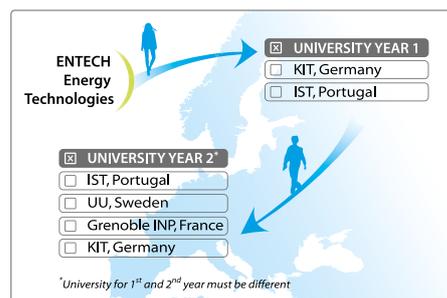
### THESIS PROJECT

The master thesis worth 30 higher education credits (ECTS) covers the entire fourth semester. Within this period, you work on a topic that is part of a research project or directly related to industry. The site (industrial enterprise or research institution) and time of this project depend on the specific topic.

### CAREER OPPORTUNITIES

MSc ENTECH ensures its graduates many

career opportunities. You may choose further research and a doctorate degree, or reap the benefits of your profound engineering skills and know-how directly in industry. In either case, you will capitalize on the numerous contacts and experiences with industry gathered during your studies. Employers from industry and research institutions alike will certainly appreciate your additional entrepreneurial skills. Moreover, your knowledge of business creation processes makes it easier for future entrepreneurs to enter the labour market.



### APPLICATION PERIODS

Application Round 1  
January 2nd - February 28th, 2014  
Application Round 2  
March 1 - April 30, 2014

### REQUIREMENTS

MSc ENTECH master programme is for outstanding students with an above-average Bachelor's degree in Mechanical Engineering, Electrical Engineering or Chemical Engineering. Admission of students with a different background in a related field may be possible after careful assessment. To qualify for ENTECH, applicants need to fulfil the admission requirements related to previous studies.

### ENGLISH PROFICIENCY

All applicants must provide proof of their English language proficiency, which is most commonly established through an internationally recognised test such as TOEFL, IELTS or University of Cambridge/ University of Oxford Certificates

Detailed information on the application procedure and requirements can be found on our website:  
[www.kic-innoenergy.com/application](http://www.kic-innoenergy.com/application)

### CONDITIONAL ACCEPTANCE

Students in their final year of undergraduate education may also apply and if qualified, receive a conditional offer. If you have not completed your studies, please include a written statement from the degree administration office (or equivalent department), confirming that you are enrolled on the final year of your education and giving your expected completion date. If you receive a conditional offer, you should present your degree certificate to the KIC InnoEnergy Admissions Office before your admission in a specific programme can be formalized. The KIC InnoEnergy Admission Office will forward this to your programme, and appointed Year 1 university, such that your admission can be completed.

### PARTICIPATION FEES AND SCHOLARSHIPS

See info on website.

### ACCREDITATION

Having successfully completed the programme (120 ECTS), you will be awarded the Master of Science (M.Sc.) as a double-degree of the two universities you have attended.

### CONTACT

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