Highly qualified lecturers of the Computational Engineering course helped me improve not only my theoretical knowledge but also my practical programming skills. Studying in an international atmosphere gave me the possibility of having friends from many other countries. Furthermore, help and support from the CompEng team and the faculty were always impressive and unforgettable.

Sima Farazi, CompEng graduate and DAAD prize awardee 2013

Computationally Engineering

An Interdisciplinary Master of Science Program at Ruhr-Universität Bochum

RUHR-UNIVERSITÄT BOCHUM

Located in the midst of the dynamic, hospitable metropolitan area of the Ruhr, in the heart of Europe, Ruhr-Universität Bochum (RUB) with its 20 faculties, its disciplinary institutional units, is home to 5,000 employees and over 41,000 students from 130 countries. Over 4,000 foreign students and several partnerships with universities around the world give RUB its cosmopolitan and international character. Students find in Bochum not only excellent conditions for interdisciplinary learning, but, both on and off the campus, numerous opportunities for leisure and cultural activities.

Added to this is an unsurpassed program for the promotion of Early Career Researchers, and an excellent infrastructure. What makes it all come alive is the people who meet on campus. They help shape the RUB and their open-mindedness makes the RUB an attractive place for people from around the world.

CONTACT

RUHR-UNIVERSITÄT BOCHUM

COMPUTATIONAL ENGINEERING
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING
Building IC/03/549 | Universitätsstraße 150 | D-44780 Bochum
Fon +49 (0)234 32-25485
Mail comp-eng@rub.de
http://compeng.rub.de/

Last update: 2nd December 2015

Computationally Engineering
RESEARCH EXPERT LECTURERS TEAMWORK EXCURSIONS

THE RUB MASTER’S PROGRAM COMPUTATIONAL ENGINEERING

For more than a decade numerical simulations based on realistic computational models in complementation with experimental verification have become indispensable tools in advanced computer-aided engineering design. As a result, the developing field of Computational Engineering became increasingly important in science and high-tech industrial applications. Aware of this development, the RUB Department of Civil Engineering established the Master of Science program “Computational Engineering” in 2000.

CURRICULUM

The program starts every winter term and takes four semesters (2 years) to complete. Each semester 30 credits should be collected according to ECTS (European Credit Transfer System).

Within their first semesters students complete the obligatory basic courses which convey to them the fundamentals in mathematics, structural engineering and solid mechanics.

The second and third semester include compulsory and elective courses on topics such as computational modeling of materials, numerical methods in static and dynamic structural analysis and design optimization. The fourth semester is dedicated to the Master’s thesis. Students are free to either write their Master’s thesis in an academic environment at a university department or in industry.

All courses of the program are held in English. Supplementary language courses and programs (e.g. TANDEM) are offered free of cost by the RUB foreign language department.

After completion of the program, RUB awards the title „Master of Science (M.Sc.)“ to successful candidates.

ADMISSION REQUIREMENTS

SUBJECT-SPECIFIC REQUIREMENTS

Students who apply for the Master’s program Computational Engineering require a Bachelor’s (or comparable) degree in either

- Civil Engineering
- Mechanical Engineering or
- a related engineering subject

LANGUAGE REQUIREMENTS

The language of instruction in the program is English. German language skills are no prerequisite for admission. Non-native speakers of English are required to furnish proof of a minimum TOEFL score of 550/215/79 or a minimum IELTS score of 6.0. Candidates who completed their first degree program in English are not required to submit an additional English language certificate.

CAREER PROSPECTS

The program qualifies students for a successful career in the research and development departments of renowned engineering companies with a high-tech background (e.g. automobile or aerospace industry).

Furthermore, graduates have excellent chances to pursue an academic career.

GENERAL REQUIREMENTS

The program provides the knowledge that is essential to work in an academic environment as well as the key skills and faculties that are essential for a successful career in industry.

Due to the high academic standards of the program and the demanding timetable a strong commitment from students is requested.

In order to study successfully students are required to work in a focused manner, with a lot of effort and dedication.

APPLICATION FORM

ONLINE APPLICATION

The first step to apply for the Master’s program Computational Engineering is to file an online application at http://compeng.rub.de/. Only if your online application is then approved you will be requested to send in your full set of application documents.

APPLICATION DEADLINE FOR THE NEXT WINTER TERM: May 1st

FINANCIAL ASPECTS

Social fee: 273,28 € per semester

COST OF LIVING

The Academic Support Group (AKAFÖE) offers apartments between 190 € and 250 € per month. The total cost of living amounts to approximately 650 € per month.

CONTACT

http://compeng.rub.de/comp-eng@rub.de

Since then, the Master’s course has been providing to its students key-skills in engineering mechanics, mathematics and programming required for innovatively designing and analyzing high-tech engineering systems and materials. The curriculum is characterized by a synthesis of civil and environmental engineering, numerical material modeling, advanced computational methods for the analysis of structures and ecosystems, knowledge-based design and optimization processes.