



FACTS AND FIGURES

RUHR AREA:

Germany's largest urban area situated in the heart of Europe. The tradition-rich focus on materials and technology is still shaping the Ruhr Area's industrial and academic landscape today.

- 11 big cities, 42 smaller towns
- 5,000,000 citizens
- 602,000 foreign citizens from almost 200 nations
- 21 colleges and universities
- 15 independent research institutes

UNIVERSITY ALLIANCE RUHR (UA RUHR):

An alliance between Ruhr-Universität Bochum, TU Dortmund University, and the University of Duisburg-Essen, the three largest universities in Germany's thriving Ruhr Area.

- 3 universities (RUB, TU Do and UDE)
- 120,000 students, thereof 19,000 international students
- 16,000 graduates
- 14,000 researchers
- 13 DFG graduate training groups
- 800 partnerships with universities in over 130 countries
- 2 liaison offices (New York, Moscow)
- further information: www.uamr.de/en/

YOUR BENEFITS:

- applications-oriented study programmes due to close ties to local communities and businesses
- low student fees (approx. 350 euros per semester)
- attend lectures and seminars at all three institutions without paying additional visiting student fees
- enjoy free public transport in the whole state of North Rhine-Westphalia
- German-language courses are provided at all levels to help you navigate your new environment confidently and to soon feel at home in Germany



MATERIALS CHAIN

Materials Chain is a unique and innovative research network that bundles the research activities in the field of materials science and technology at the three Ruhr Area universities into one alliance for science and education.

- 250 research groups
- 6 materials science related study programs
- 5 renowned partner institutions
- hands-on approach to academia
- strengthening the Ruhr Area's role as an internationally leading region of materials



Master's Programmes in Materials Research

- Computational Engineering
- Lasers and Photonics
- Materials Science and Simulation
- Manufacturing Technology
- Molecular Sciences - Spectroscopy and Simulation
- Process Systems Engineering

Study materials sciences in Germany's leading region of materials: the Ruhr Area!



COMPUTATIONAL ENGINEERING

For more than a decade, computational engineering has become increasingly important in science and high-tech industrial applications. *Computational Engineering* provides you with key skills in engineering mechanics, mathematics and computer science required for innovatively designing and analysing high-tech engineering systems and materials. The programme is embedded in a strong research environment with an excellent international reputation. As a graduate from this programme, you will be well prepared for top-level positions in both academia and industry.

APPLY UNTIL: May 15 (non-EU citizens), July 15 (EU citizens)

PROGRAMME START: October (winter term)

MORE INFO: www.compeng.rub.de



MATERIALS SCIENCE AND SIMULATION

With its focus on decisive key competencies in materials science, physics, and numerical methods and its internationally renown teachers, the Master's Programme *Materials Science and Simulation* prepares you for an academic or industrial career in materials science. Combining comprehensive training in numerical simulation, experimental characterization, and processing techniques with experiment and hands-on project-oriented teamwork, it will enable you to apply modern experimental methods on all relevant scales and thus open a broad field of professional options for you.

APPLY UNTIL: March 15 or June 15 (non-EU citizens), September 15 (EU citizens)

PROGRAMME START: October (winter term)

MORE INFO: www.icams.de/mss

LASERS AND PHOTONICS

Lasers and Photonics provides you with extensive insight into the highly interdisciplinary field of optics, lasers and photonics. Current research on photonics and terahertz technology and its relevance for applications will be inferred. In addition to the fundamental courses in these fields, the programme offers hands-on lab projects in state-of-the-art laser laboratories, the opportunity to participate in interdisciplinary research projects, publish the results in top-ranking journals and to visit research partners worldwide.

APPLY UNTIL: January 15 (for summer term),

July 15 (for winter term)

PROGRAMME START: April (summer term),

October (winter term)

MORE INFO: www.ei.rub.de/studium/lap



MOLECULAR SCIENCES - SPECTROSCOPY AND SIMULATION (IMOS)

With a focus on the molecular understanding of chemical and biochemical processes, *iMOS* covers both the traditional disciplines of chemistry and physics as well as advanced spectroscopy, computer simulation and quantum chemistry. The goal of this programme is to train you in both cutting-edge science and modern techniques at an early stage of your career. The course offers hands-on experience in experimental and theoretical methods along the opportunity to participate in research projects as well as to conduct a three-month research internship at leading institutions in the area of molecular sciences.

APPLY UNTIL: July 31

PROGRAMME START: October (winter term)

MORE INFO: www.rub.de/imos

MANUFACTURING TECHNOLOGY

Mechanical engineers are pioneers for progress and development in the field of industrial production. Due to the increasing complexity of mechanical engineering developments, a comprehensive understanding of the individual fields of mechanical engineering is essential. The Master's programme *Manufacturing Technology* equips you with detailed knowledge, skills, and competences in the field of interdisciplinary production engineering. Close collaborations with partners in academia and industry worldwide prepare you for an international career in the production sector.

APPLY UNTIL: March 15

PROGRAMME START: October (winter term)

MORE INFO: www.mmt.mb.tu-dortmund.de



PROCESS SYSTEMS ENGINEERING

Process Systems Engineering enables you to work on the design and operation of complex chemical and biochemical production systems using mathematical models and modern computer tools for simulation and optimization. This comprises advanced control and production scheduling methods and the analysis and description of experimental data which will enable you to be at par with the electronics involved in a chemical plant. Joint work in international classes, tutorials, labs and project groups will broaden your horizons and enable you to interact respectfully in international teams and organizations.

APPLY UNTIL: April 30

PROGRAMME START: October (winter term)

MORE INFO: www.bci.tu-dortmund.de/cms/en