Why NanoEngineering?

Nanotechnology in general is the science of realization and use of structures with at least one dimension smaller than 100 nm. Such structures enable new and advanced material and device properties. In order to become a key technology of the present century, nanoscience and nano-technology have to advance fundamental research in the lab and develop industrial applications. For this industry needs highly specialized and well educated engineers in the field of nano-technology. Engineers will transform nano effects into nano products.

The pioneering master-program NanoEngineering at the University Duisburg-Essen prepares young people for the new challenges in the field of nanotechnology from an engineering point of view. The program allows students to choose two scientific profiles – Nano-Process-Technology and NanoElectronics / NanoOptoelectronics. Both profiles conclude with a Master of Science (M.Sc.) degree in NanoEngineering. By elective courses it also provides inside into business, enterprise management and legal issues, all of which are crucial for any professional working in industry.

About the program

The interdisciplinary Master's program in NanoEngineering addresses motivated students with a good first degree in electrical or mechanical engineering, physics or chemistry, with an emphasis on material sciences or nanotechnology.

The program has a modular structure and will last 2 years or 4 semesters, respectively. For both profiles the students will have the same advanced basics courses, e. g. advanced mathematics, surface science, laser technology, and micro and nano systems. A research project is mandatory, where a small group of students work together on a joint topic. Depending on the chosen profile, the students have different main courses. The study will finish with a master's thesis lasting six months.

The 4 semester master's program should extend the qualifications obtained in a bachelor program. The graduate is in the position not only to use scientific methods for solving complex problems but also to analyze and improve these methods.

After a successful Master degree a subsequent doctorate to a Dr.-Ing. or to a Dr. rer. nat. is possible for excellent students.

Required:
Bachelor of Science in
- NanoEngineering or
- Electrical Engineering, Mechanical Engineering, Chemical Engineering, Materials Science, Physics or Chemistry

(3 year program at a University with emphasis on material or nano sciences, grade < 2.5)

Master of Science
in NanoEngineering (M. Sc.)

Master-Program NanoEngineering
(4 semester)

Two profiles:
Nano-Process-Technology and
NanoElectronics/ NanoOptoelectronics

Nano-Process-Technology

The profile Nano-Process-Technology prepares the students to meet challenges in nanoparticle and nanostructure production and process techno-logy. Main courses in the curriculum are fluid dynamics, process automation, nanoparticle formation, aerosol technology and nano crystalline materials.

NanoElectronics / NanoOptoelectronics

Master's with this profile are working in the field of optoelectronic and nanoelectronic devices. The students gain experience in quantum theory, nano(opto)electronics, spintronics, and device and circuit analysis.

10 reasons,

why you should study NanoEngineering in our Master's-program at the University Duisburg-Essen:

- good career opportunities because Nanotechnology is a key-technology of the 21st century
- world-class institution with nanotechnology as one of its main research topics
- Master program located in the Department of Engineering in cooperation with the Department of Physics
- Master's-degree program based on the pioneering and successful Bachelor-program NanoEngineering
- state-of-the-art and advanced courses with strong practical aspects
- excellent relationship between students and teachers
- individual support and working possibilities in small groups
- high-tech laboratories and working places equipped with state of the art instruments
- numerous industrial cooperation's
- living in an area with a high density of fascinating recreational opportunities

In other words:
You get a first-class education in a future-oriented discipline within a pleasant atmosphere

Information

Applications or enquiries should be sent to:

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All information regarding enrollment

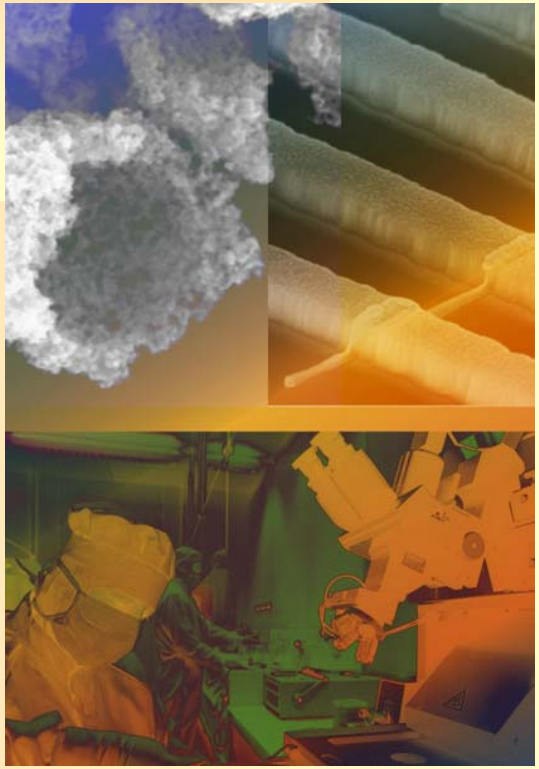
www.uni-duisburg-essen.de/studierendensekretariat

Student Union

http://fb9-fsr.uni-duisburg.de/forum/

Master-Program

NanoEngineering



www.nanoingenieur.de

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