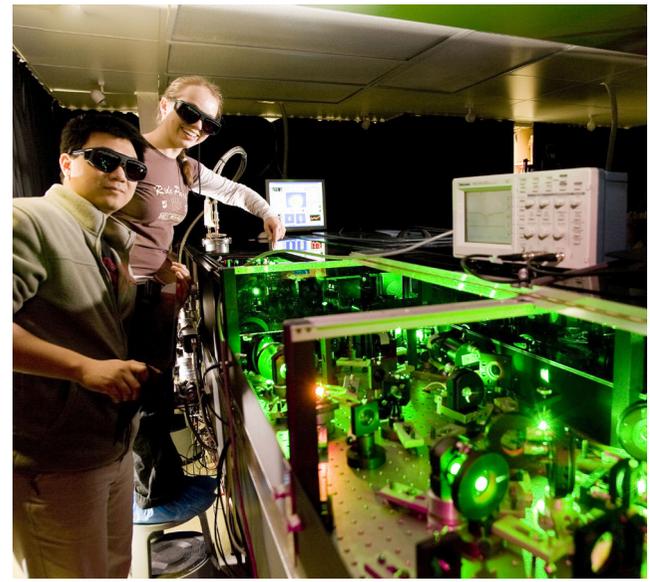




International Bachelor Program Energy Science



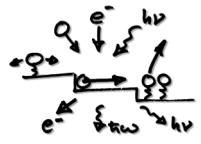
Application

Faculty of Physics
University of Duisburg-Essen

- **Dr. Angelika Pretorius**
Email: dekanat@physik.uni-due.de
- **Prof. Dr. Dietrich Wolf**
Email: dietrich.wolf@uni-due.de
- **Prof. Dr. Rolf Möller**
Email: rolf.moeller@uni-due.de

for more information
www.uni-due.de/energy-science/

Partners



SFB 616
Energy dissipation
at surfaces



Semester	Energy Science (incl. Laboratory Courses)		Physics and Chemistry (incl. Laboratory Courses)		Theory (incl. Mathematical Methods)		Other Qualifications		Σ Cr
	Module	Cr	Module	Cr	Module	Cr	Module	Cr	
1	General Education	6	Physics I	9	Theory I	8	General Skills	6	29
2			Physics II	9	Theory II	9			31
3	Energy Science I	3	Physics III	9	Theory III	10			30
4	Energy Science I	3	Physics IV	9	Theory IV	14			30
5 ¹⁾	Energy Science II	12	Advanced Science I	12			Studium Libérale	4	28
6 ¹⁾	Energy Science III	12	Advanced Science II	6				4	32
7	Energy Science IV	12	Advanced Science III	9	Theory V	6	Advanced Scientific Methods	5	32
8	Energy Science V	12					Bachelor Thesis	4	28
Σ Cr		82		76		47		12	240

Modules Ordered by Competence Area

^{*)} Integrated study year at a partner university abroad, here the programme offered by Budapest University of Technology and Economics (BME)



Topics

A basic, scientific view on

■ Energy resources

- fossil
- nuclear
- solar
- wind
- hydro power
- bio fuel
- waste heat

■ Energy management

- efficiency
- transmission
- storage
- sustainability

■ Energy & society

- environment
- economics
- politics

Motivation

It is one of the urgent challenges for scientific and engineering research to develop and evaluate concepts for the energy supply in societies, which rely heavily on technology. Global consequences for climate, quality of life, mobility and health must be taken into account. Whereas current energy technologies are taught in mechanical and electrical engineering, scientific study programs that address the topic from a more abstract, microscopic perspective are largely missing. This is in marked contrast to the fact that the microscopic mechanisms of energy conversion and storage are in the focus of modern physics, chemistry, and biology. They become increasingly important as micro- and nanoscale processes make their way into technological innovation.

Goal

The Bachelor program "Energy Science" at the University of Duisburg-Essen aims at closing this gap. It is an interdisciplinary study program organized by the Faculty of Physics with substantial contributions from chemistry and engineering.

Structure

- 4-year Program
- Third year study abroad
- Course language: First two years in German, last two years in English

Integrated studies abroad

Enormous cultural differences exist in the way, how resource limitations are considered and energy technologies are accepted. An open-minded view of the different national interests worldwide and the ability to communicate easily on an international level are indispensable for a sound judgement about energy questions. In order to provide the students with this competence, a year of studies abroad is part of the Bachelor program "Energy Science".

The curriculum is such that the third year should be spent abroad. For foreign students who come to Duisburg-Essen in exchange during this or the following year from our partner universities, we offer an attractive program complementary to the one of their home universities. Teaching will be in English in the third and fourth year.

