



## STUDENT LIFE IN NORDHAUSEN

The University of Applied Science Nordhausen represents:

- ✓ A **young and modern university** with well-equipped labs and lecture rooms according to actual standards.
- ✓ **Education at a high level.**
- ✓ Compared to larger universities, Nordhausen sets great emphasis on an **individual contact between students and instructors.**
- ✓ **Teaching, learning and coaching, occur in small groups.**
- ✓ Students are always staying in **direct contact with their professors and lecturers.**
- ✓ **Green campus.**
- ✓ All necessary facilities for **studying and working in a pleasant atmosphere** are in short walking distance.
- ✓ Various **student initiatives and activities** make for an interesting and diversified student's life.

### City of Nordhausen

The city of Nordhausen with approx. 40.000 inhabitants represents the important economical center of Northern Thuringia. Due to its central position in the heart of Germany, either train, bus or car can easily reach Nordhausen. Metropolises as Berlin or Leipzig as well as other larger cities as Erfurt, Kassel or Göttingen are also quickly accessible by this means.

The city of Nordhausen offers wide leisure time facilities: cinemas, public bathes or the theatre are located in the city.

Nordhausen is situated on the southern edge of the Harz Mountains. This mountain range is a popular vacation destination. It is famous for its variety of outdoor activities like hiking, mountain biking, swimming in lakes, enjoying the quiet, large forests or – in winter – skiing.

In contrast to larger cities, costs of living are moderate. Accommodation in hall of residences as well as private lodging is available at low rates.

## RENEWABLE ENERGY SYSTEMS

### INTERNATIONAL MASTER DEGREE PROGRAMME



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**HOCHSCHULE  
NORDHAUSEN**  
University of Applied Sciences

INTERNATIONAL  
INTERDISCIPLINARY  
FUTURE-ORIENTED

### CONTACT

#### Study Service Centre

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### GENERAL INFORMATION



#### Graduation

The internationally recognized academic degree of Master of Science (M.Sc.) will be conferred on students by the University of Applied Sciences Nordhausen, upon successful completion of the programme.



#### Entrance Requirements

The entry requirement for the Master's degree program is a university degree with competent final degree grades in physics, science or a scientific engineering discipline whose curriculum covers the subject entry requirements (e.g. physics, physics engineering, mechanical engineering, electrical engineering/electronics, mechatronics). Above-average Bachelor's degree in mechanical engineering, process engineering or related field, TOEFL iBT 79 or IELTS 6.0, German A2, APS (only for applicants from China and Vietnam) English proficiency is also mandatory. The acceptance is decided in an approval test.

All courses are taught in English.

### ADDRESS

University of Applied Sciences  
Nordhausen  
Weinberghof 4  
99734 Nordhausen  
Germany



HSN 02.18VV1



## THE DEGREE PROGRAMME „RENEWABLE ENERGY SYSTEMS“

Are you interested in taking part in designing our renewable energy future? Then join the Master's degree programme on Renewable Energy Systems at the University of Applied Sciences in Nordhausen.

During three semesters, all important aspects related to renewable energies will be addressed i.e.:

- What are existing and emerging technologies to harness renewable resources?
- How can they fulfill the demands for power, heat and fuels?
- How can we integrate renewable energies into existing energy systems?
- What benefit with respect to climate change, abatement of greenhouse gases and other environmental problems may be expected by strengthening renewable energies?

As the course outline indicates, the master course Renewable Energy Systems combines lectures with exercises, seminars or practical laboratory training

Additionally, excursions to sites, manufacturers and companies form an important component of this course, establishing a link between theory and practice.

Offering a variety of elective courses, the master course allows for individual concentration according to your personal interest.

Furthermore, the master course sets strong emphasis on project work. In these projects, you will address actual problems related to renewables.

During these project phases, you may also take part in actual research projects performed at the Institute of Renewable Energy Technology, in.RET.

The final research semester under supervision of a professor from the university concludes the program with your master thesis.

The Master's programme is presented in modular form. Under the European Credit Transfer and Accumulation System (ECTS), students receive a fixed number of credits for every successfully completed teaching module. This system facilitates the recognition of students' coursework, should they change universities in their home country or abroad. A special curriculum with 6 semester length is provided for part-time students.

## MASTER PROGRAMME RENEWABLE ENERGY SYSTEMS AT A GLANCE

### Entrance requirement for the Master degree's program

University degree or above-average bachelor degree, which corresponds to 210 Credit Points according to the European Credit Transfer and Accumulation System (ECTS). Generally, this corresponds to bachelor study courses lasting 7 semesters.

Graduates of Bachelor degree programs lasting 6 Semesters (corresponding to 180 CP) may obtain additional 30 Credit Points during a practical internship in industry of at least 6 month in their home countries. Granting of these additional CP's is based upon a written report covering the internship.

### 1<sup>st</sup> semester – LECTURES AND COURSES

- Bioenergy: solid biomass and biogas
- Photovoltaic
- Fuel cell technology
- Non-technical module: German

- Life cycle analysis of renewable energy systems
- Elective course 1\*
- First project work

### 2<sup>nd</sup> semester – LECTURES AND COURSES

- Wind energy
- Solar thermal lab
- Bioenergy-liquid biofuels

- Elective course 2\*
- Second project work

### 3<sup>rd</sup> semester – MASTER THESIS

Master Thesis and Master Colloquium (Presentation and Defense)

#### \* Elective courses (Selection)

Economical aspects of renewable energies, Bio-process engineering, Hydro power, Geothermal energy, Solar thermal technologies, Renewable energies in rural areas, Ocean energy, Numerical methods in heat and mass transfer, CFD, Modeling of electrical systems in LT-spice climate change

### WHY RENEWABLE ENERGY SYSTEMS?

Climate change, depleting fossil resources, increasing costs for energy carrier - these key words illustrate one of the main challenges of the 21st century: fulfilling the increasing global energy demand and securing a reliable, sustainable and affordable energy supply, as energy is one of the backbones to economic growth and social welfare.

The ongoing discussion on the consequences of an increasing demand for fossil fuels and the necessity of abating greenhouse gas emissions indicates that our exposure to energy reached a crossroad: either continuing as usual or postpone the (already known) consequences to succeeding generations or acting now. Acting now means: accelerated dissemination of renewable energies, as renewables, like wind and solar energy, hydropower, geothermal energy and biomass are abundant resources. Additionally, as they are locally available, they open the road for fulfilling the existing and growing regional or local energy demand in an environmental friendly, sustainable and economical way.

However, disseminating renewable energies often demand for a new way of thinking. Constructing and operating renewable energy systems as well as integrating them into existing energy systems, be it power, heat or fuels, is a complex task, demanding for highly skilled and trained experts.

### PROFESSIONAL PERSPECTIVS

Due to the expected dynamic growth of the international renewable energy sector, markets for appropriate technologies will expand rapidly. Consequently the global demand for highly qualified engineers in renewable energies is increasing constantly, thus offering excellent career prospects for graduates of the Master's degree programme in renewable energy systems both nationally and internationally.

Typical examples of employment opportunities are found in research and development in industry and research institutes as well as in design, construction, operation or management of renewable energy systems.

The close contacts that the teaching staff possesses with the industrial firms and research institutes ensure that the training is practically oriented and is up-to-date with the course contents.

The Master's degree in renewable energy systems also qualifies its holder to pursue a PhD.