The innovative Master’s degree program in Clean Energy Processes opens up exciting perspectives for future-oriented students. Deepen your knowledge in chemical engineering, process engineering and other relevant disciplines such as materials science and electrical engineering. Set your own focus on energy systems or energy technology.

Engineering on the highest scientific level for a sustainable future

Today engineers are required to be able to work on questions of energy change and to find the necessary solutions for a sustainable future for the planet.

The research oriented Master’s degree program CEP is designed to prepare graduates for precisely those tasks. Graduates are able to work as an engineer on the highest scientific level in industry or academia with regards to clean energy processes while focusing on energy technology and energy systems. Students are able to become experts in their chosen specialization.

Course outline

The innovative Master’s degree program in Clean Energy Processes enables students to increase their knowledge in chemical engineering and process engineering and other relevant disciplines such as material sciences and electrical engineering while allowing students to choose a specialization in energy systems or energy technology.

FAU’s closeness to the leading research hub in renewable energies and close ties to industry enable students to perfectly prepare for demanding and meaningful tasks in either research or industry.

Students will have the possibility to develop and obtain knowledge on cutting-edge research in energy processes done by the Helmholtz Institute for Renewable Energy and other relevant institutes situated at or in close proximity to FAU (e.g. Energy Campus Nürnberg, Fraunhofer Institute for Integrated Circuits, Bavarian Center for Applied Energy Research e.V.).

CEP info brochure

Master Clean Energy Processes

FAU - Moving Knowledge

#FAUtogether

CEP is designed as a 4-semester Master’s degree program and is made up of different modules in the two specializations energy systems and energy technologies.

The general structure includes specialization modules and laboratory courses as well as compulsory elective modules in the chosen specialization and elective modules.

A seminar on “Sustainability and Environmental Ethics” as well as an internship and the Master’s thesis are mandatory parts of the program.

The content of each semester and the specific elements of the curriculum are described in detail on the CEP website.

The Master’s degree program offers two branches of study:

Course content

The study plan includes:

The paradigm shift in the way we produce and consume energy due to the climate crisis is reshaping the industrial landscape, beginning with the preferred sources of energy and their processing as well as the established manufacturing practices in the biotechnological and chemical industry.

A society and industry based on renewable energy requires new processes, new process chains, and new apparatus. The CEP degree program specifically addresses the challenges we face today with a specifically designed curriculum. It offers a well-founded engineering degree program with a customizable cocktail of lectures, tutorials and laboratory courses, equipped with modular specialization options to be tailored to individual interests (e.g. life cycle assessment, economics of climate change, microfluidics). Specific attention is given to all aspects of

climate change and related business transformations by exposing the students to the impacts and functionalities of the energy market, correlated socio-economic aspects, as well as ethical implications of technology upheavals.
A stimulating study environment and close interaction with the professors and esteemed researchers (especially the prestigious Helmholtz Institute for Renewable Energies) provide ideal conditions for a productive phase of life.
Graduates of the program stand out due to an extensive knowledge of innovative technologies for renewable new energy systems and energy production. They can play a significant role in the successful introduction of new sustainable energy systems and energy processes and adequately evaluate sustainability on a global scale. As they have more experience with international and research-related topics than other graduates, they are especially suited for tasks on the highest level of engineering or to pursue a career in academia.
They will be the ones creating the change we need for tomorrow.
Please see the application deadlines and detailed information on the application procedure on the CEP website.
Our Student Advice and Career Service (IBZ) is the central point of contact for all questions about studying and starting a degree programme. Our Student Service Centres and subject advisors support you in planning your studies.

Degree: Master of Science
Duration of studies in semester: 4
Start of degree program: Summer semester, Winter semester
Study location: Erlangen
Number of students: 150-250
Subject group: Engineering sciences, Mathematics, Natural sciences
Special ways to study: International degree program, Part-time degree program
Teaching language: completely in English
Admission Requirements: Qualification assessment
Admission requirements (first semester): Qualification assessment
Content-related admission requirements: B.Sc. in a similar degree program (Chemical/Biological Engineering, Energy Technology etc.)
Above-average grades
English language proficiency (min. level B2 CEFR)
German language skills for international applicants: No DSH, English (level B2, CEFR)
General language skills: Proficiency of the English language on level B2 of the Common European Framework of Reference for Languages (CEFR), see CEP website for details
Details and notes: Please see the application deadlines and detailed information on the application procedure on the CEP website.