Brandenburg University of Technology Cottbus - Senftenberg

MASTER OF SCIENCE

# CONTROL OF RENEWABLE ENERGY SYSTEMS

The objective of the two-year European Master's Programme on Control of Renewable Energy Systems (EU-CORE) is to train top-level engineers from across the world on the design of advanced control technologies for renewable energy systems and to contribute to the emergence of a new generation of graduates who are needed to achieve Europe's environmental and energy ambitions under the Green Deal.

Unlike other erasmus+-funded programmes linked to renewable energy systems which focus on one source of energy, EU-CORE will cover all the main renewable energy sources and their associated control issues. Thanks to a selection of top-level academic and industrial partners, the skills developed throughout the EU-CORE Programme will open the door to a wide variety of careers in the renewable energy industry.

During the first three semesters teaching takes place at the locations of the three partner universities

- Ecole Centrale de Nantes (France),
- University of Zagreb (Croatia),
- Brandenburg University of Technology Cottbus-Senftenberg (Germany).

## CONTACTS


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## GENERAL INFORMATION

**Degree** Master of Science (M.Sc.)
**Standard period of study** 4 Semester
**Form of studies** Full-time
**Language of instruction** English
**Start of studies** Winter semester
**Study location** Main Campus Cottbus, Partner universities

## ADMISSION PROCEDURE

Restricted admission

## ADMISSION REQUIREMENTS

- At least a Bachelor's degree in Mechanical Engineering, Electrical Engineering, Process Engineering and related courses of study
- Knowledge in automatic control is mandatory
- Proof of English language skills (please note the explanations on this on the study programme website)

Further information:

» **www.b-tu.de/en/study/before-studying/application-admission-enrollment**
» **master-eu-core.ec-nantes.fr**

## PROFESSIONAL FIELDS OF ACTIVITY

- private and public sectors of energy and automation technology
- research and development at universities and research institutions
- industrial research and developmentat private companies
- planning and policy-making organizations

**www.b-tu.de/en/control-renewable-energy-systems-ms**

| Modules | Credit Points per Semester | | | | M/CE* |
|---|---|---|---|---|---|
| | I | II | III | IV | |
| **Ecole Centrale de Nantes (France)** | | | | | |
| Renewable Energy Systems | 4 | | | | M |
| Wind Power Energy 1 | 4 | | | | |
| Wind Power Energy 2 | 4 | | | | |
| Power Conversion | 4 | | | | |
| Linear Control Systems | 4 | | | | |
| Nonlinear Control Systems | 4 | | | | |
| Project | 4 | | | | |
| French Language and Culture | 2 | | | | |
| **University of Zagreb (Croatia)** | | | | | |
| Control and Grid Integration Techniques for Renewable Energy Sources | | 5 | | | M |
| Predictive control | | 5 | | | |
| Estimation Theory | | 5 | | | |
| Control of Microgrids | | 5 | | | |
| Energy-Efficient Buildings Control | | 5 | | | |
| Seminar on Solar Energy | | 3 | | | |
| Croatian Language and Culture | | 2 | | | |
| **Brandenburg University of Technology Cottbus-Senftenberg (Germany)** | | | | | |
| Compulsory elective module 1 | | | 6 | | CE |
| Compulsory elective module 2 | | | 6 | | |
| Compulsory elective module 3 | | | 6 | | |
| Compulsory elective module 4 | | | 6 | | |
| Compulsory elective module 5 | | | 6 | | |
| **Master Thesis** | | | | 30 | M |
| **Sum of Credit Points (120 CP in total)** | **30** | **30** | **30** | **30** | |

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|---|---|---|---|---|---|
| **Compulsory elective modules at BTU: Hydrogen, Geothermal Energy, Storage and Power Networks** | | | | | |
| Geothermal Energy | | | 6 | | CE |
| Hydrogen and Fuel Cells | | | 6 | | |
| Electrochemical and Chemical Energy Storage and Conversion | | | 6 | | |
| Control of Power-to-X, Storage and X-to-Power Systems | | | 6 | | |
| Thermal Process Engineering and Equilibrium Thermodynamics | | | 6 | | |
| Optimisation in Process and Energy Systems Engineering | | | 6 | | |
| Advanced Methods in Process, Energy and Systems Engineering | | | 6 | | |

*M = mandatory modules | CE = compulsory elective modules