
Job Profile for M.Sc. BI-CE “Civil Engineer for Building Energetics“ („Bauingenieur:in für Gebäudeenergetik“)

1.1. Description

As an energy engineer in the building sector, you look at the building in particular from a building physics and energy perspective.

- You will dimension building envelopes and carry out building physics verifications, using independent calculations and numerical simulations. Thermal building simulations (energy demand, heating and cooling load calculations) are used for heat protection, for example. You also carry out measurements and tests on the building itself. Additionally, your tasks may include the dimensioning of technical building equipment and investigations into building concepts and building technology components.
- You will carry out assessments of energy-efficient buildings and advise planners on efficient buildings and the use of efficient building technology.

A university degree in civil and environmental engineering, building physics and technical building services or similar is required. Knowledge of measurement technology, (building physics and building management) standards and guidelines as well as CAD programs and common GEG calculation programs are recommended. In addition, the specialist knowledge should include the area of building energy efficiency or passive house planning, technical building equipment (ventilation technology, heat pumps, renewable energies) and the area of simulation calculations for the behavior of buildings or building components. Further training to become a certified energy consultant/energy efficiency expert is a useful addition.

1.2. Module Recommendation

Basic research modules totalling 36 CP (12 CP per research subject)

Below you will find a selection of modules with a total of 12 CP for the basic research modules, adapted to the job profile " Civil Engineer for Building Energetics". Please note that a total of 36 CP (12 CP per research subject) must be earned in the Subject-related compulsory elective area.

Research subject “Building Construction and Building Physics” („Baukonstruktion und Bauphysik“)

- Advanced Building Physics [13-D3-M001] (6 CP)
- Konstruktives Gestalten [13-D1-M001] (6 CP)

Research specialization modules amounting to 12 CP

Research subject “Building Construction and Building Physics” („Baukonstruktion und Bauphysik“)

- Bauen im Bestand und Energetische Sanierung [13-D3-M015] (6 CP)
- Green Building Design I [13-D1-M007] (6 CP)
- Green Building Design II [13-D1-M008] (6 CP) (can alternatively also be chosen in the subject-related elective area)

Modules from the subject-related elective area amounting to 36 CP

Below you will find module recommendations totalling 18 CP. Please note that you must complete a total of 36 CP in the subject-related elective area.

- Energy Efficiency [13-K3-M016] (3 CP)
- Computational Methods for Building Physics and Construction Materials [13-D3-M020] (6 CP)
- Artificial Intelligence for Building Industry [13-M2-M022] (6 CP)
- Facade Technology II [13-M4-M003] (3 CP)

1.3. Further Information on the Job Profile

Modules such as „Physik“ [05-95-1001] (8 CP) and „Baukonstruktion und Bauphysik“ [13-D0-M001] (6 CP) from the compulsory engineering modules and the modules from the identically named Bachelor’s job profile form the basis for this Master’s job profile.

The modules “Computational Methods for Building Physics and Construction Materials”, “Facade Technology II” and „Artificial Intelligence for Building Industry” are thematic additions and are not essential.

1.4. Advice on the Job Profile

Contact persons from the working group „Energie im Bauwesen“

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