Project “Skill Energy BSR”, WP 4 - Presentation:

Dual Bachelor Study Course “Engineering & Management of Renewable Energy and Energy Efficiency”

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Overview

- The University of Corporate Education Hamburg
  - Facts & Information
- The dual bachelor study course „Engineering & Management of Renewable Energy and Energy Efficiency (TMEE)“
  - Main focus and objectives
  - Curriculum structure
  - Organisation and operation
  - Admission requirements and costs
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Facts & Information

- Foundation midyear 2005 (following decree HmbBAG of 29 June 2005)

- Associates:
  - Chamber of Trade Hamburg (main associate)
  - Chambers of Trade Braunschweig-Lüneburg-Stade and Schwerin
  - Guilds of Hamburg

- Dual Bachelor Study Course “Business Administration for SME”
  - First course started in Oct. 2006
  - Accreditation as a “Bolongna compliant” Study course in 2007 by “Foundation for International Business Administration Accreditation (FIBAA)”
  - Successful renewal of the accreditation in 2012

- Dual Bachelor Study Course „Engineering & Management of Renewable Energy and Energy Efficiency (TMEE)“
  - Development of the curriculum in Cooperation with the Hamburg University of Technology (TUHH)
  - First course started in Oct. 2011
  - Accreditation in 2011 by FIBAA
Professions in Combination with TMEE

- Electrician
- Plumber and Heating Fitter
- Roofer
- Carpenter
- Chimney Sweep

- and other vocational trainings or qualifications in the field of installing or optimizing „energy“ in buildings
Construction of the dual study (integrated degree program) - TMEE

TMEE (final degree: Bachelor of Arts)

recognized vocational qualification: (skilled worker)

high school graduate or comparable permission to go to university of applied sciences

2 - 3,5 years

4 years
Organisation and operation: Scheduling of Education amongst the Training Institutions

- Studies at the BA-H in part-time form (12 hrs. p.w., Fri + Sat)
- Outside the block periods the students work at their training company up to 4 days per week
- Minor overlapping with study blocks at vocational school are possible
- Study blocks will be scheduled in accordance with school holidays
- Practice reflections integrate the course into the training at the company
TMEE: Main Focus and Objectives

- **Main Focus:**
  - Application of renewable energy technology as well as the efficient use of energy in residential and functional Buildings of private enterprise and the state
  - Interdisciplinary planning, implementing and current use of technical facilities as well as the realization of technical measures to increase energy efficiency

- **Objectives:**
  - Achievement of a holistic (scientific-based) Understanding of technological, ecological and economical challenges of renewable energy
  - Achievement of the professional competence to plan and to implement technical facilities in a comprehensive and integrative manner
  - Achievement of the professional competence as well as the social and communicative competence, necessary to advice and to convince customers
  - Achievement of the ability to bring competitive products and services offered to the market of renewable energy
TMEE: Curriculum structure
Module Overview (180 Credit Points / ECTS)

Management Core Module 44 CP
- business law
- strategic management
- investment, finance & risk management
- cost and performance accounting
- Marketing

Technical Core Modules
62 CP

Personal Skills 14 CP
- scientific methods and presentation
- negotiation
- projectmanagement

Management Specialisation 5 CP
- total quality management
- Businessplan.
- business simulation game

Technical Specialisation Modules
10 CP

3 Student Project Term Paper (15 CP)
application-oriented management

Other examinations
- Bachelor-Thesis (12 CP)
- Kolloquium (3 CP)

3 Student Project Term Paper (15 CP)
application-oriented renewable energy
Technical Core Modules (62 Credit Points)

- Basics of building systems I: heating, cooling and ventilation requirements
  - principles of thermodynamic
  - heat transfer
  - heat recovery

- Basics of building systems II: electrotechnical requirements, building automation
  - lighting technology
  - electric consumers (e.g. pumps, fans)

- Basics of building systems III: constructional requirements, building physics
  - thermal insulation of the building envelope
  - air tightness (air sealing, measurement of air tightness)
Technical Core Modules

- Renewable energy systems
  - photovoltaic systems
  - solar thermal systems
  - heat pump systems
  - combined heat and power systems
  - Fuel cell
  - …
Technical Specialisation Modules (10 Credit Points)

- application-oriented student project work (planning, implementation, monitoring and documentation of new energy facilities or energetic optimization of existing facilities)
  - photovoltaic systems
  - solar thermal systems
  - heat pump systems
  - combined heat and power systems
  - Fuel cell
  - conventional energy facilities (condensing heating technology)
Selection of Appropriate Modules for a transfer in the skill energy project

- 2 x Technical Core Modules:
  - energy efficiency and heat insulation in buildings (T 7)
  - Cogeneration (combined heat and power generation), energy conversion, energy distribution and energy use (T 8)

- 1 x Technical Specialisation Modules:
  - heat generation from bio mass (TS 5)
Advantages for Enterprises

- Recruiting of motivated (technical) high-school graduates for their company
- Recruiting and early vocational adjustment of a new generation of qualified executives
- Practice-oriented academic training with a unique combination of mediation of technical and business administrative know-how
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Admission Requirements and Costs

- **Admission Requirements**
  - Higher Education Qualification
    - University Entrance Qualification
    - Technical College Entrance Qualification
  - Personal Aptitude
    - Willingness to perform
    - Capacity to study
  - Conclusion of Contract
    - Qualification contract for 4 years between University of Corporate Education, the Company and the student
    - Vocational training contract following Handwerksordnung (HWO) or Berufsbildungsgesetz (BBIG)

- **Costs**
  - Vocational training / apprenticeship pay
  - Study fees of 350 EUR per month - absorption of charges in parts by the company (agreement between company and trainee) where appropriate