



MBA Building Sustainability

Management Methods for Energy Efficiency

A Three Semester Master's Degree Program

Taught in English

Berlin, Germany



Welcome to the Technische Universität Berlin

Dear students,

Welcome to the internationally renowned Technische Universität Berlin located in Germany's capital city at the heart of Europe. I am most delighted that you have chosen our institution for your master's degree.

With over 30.000 students, TU Berlin is one of the largest universities of technology in Germany. One of our most important tasks is to prepare our students for the challenges they will face in the future.

The MBA program Building Sustainability – Management Methods for Energy Efficiency is a comprehensive, interdisciplinary course for those who plan a career in real-estate project management and planning with a focus on implementing sustainability. The program will provide you with basic knowledge and skills connecting theory, research and practice. For these educational objectives, the EUREF Campus of TU Berlin offers an inspiring atmosphere and a great number of outstanding scientific events.

With this brochure, we would like to help you in getting started at TU Berlin. You will find an introduction to the Master program as well as helpful links and contact details. For further information, please do not hesitate to contact our team of the Academic Advisory and Examination Office. They are here to assist you with all the necessary formalities.

I wish you a motivating and successful time at our university.

Prof. Dr. Christian Thomsen

President



Introduction

Dear prospective and active students,

The concept of the German “*Energiewende*” – literally, energy transition – has gained international attention. It includes a variety of measures that aim at making Europe’s largest economy free of fossil fuels and nuclear energy. In order to attain this, all areas of energy production and consumption will have to go through a transition process. Beside mobility and production, buildings are therefore one of the key factors for a successful *Energiewende*. In the building sector, this means redirecting from a mainly fossil-fueled energy supply towards renewable energies and a much more energy-efficient use of energy in buildings and urban, as well as, regional areas. This is one of the largest and most urgent challenges of current urban development and other social disciplines.

Finding solutions to such a complex challenge means that a multitude of actors, from business, civil society, to public administration take part in the process and influence it with their differing and often conflicting interests. Resulting from this is the need for skilled workers who, based on a highly professional qualification, both understand all stakeholders and are able to work in a leading position with them.

The MBA program in Building Sustainability – Management Methods for Energy Efficiency will teach you exactly this: skills, methods, and concepts to consider different approaches, to understand them, and to align them for reaching sustainable solutions. Such proficiencies are not only important in the context of the *Energiewende*, but are indispensable in every building, construction and real estate project that takes energy efficiency and the other sustainability criteria like economical, ecological, social, and cultural balances into account.

In this regard, you will learn a lot from our experts, coming from research labs and science institutions as well as from the practical areas of planning and implementation. You will also learn from your classmates and hopefully enjoy the international, interdisciplinary teamwork as well as Berlin’s urban and cosmopolitan atmosphere.

Prof. Julian Wékel



Academic Director



Studying management methods for energy efficiency with the experts

According to the German Advisory Council on Global Change, by 2050, the urban population alone will be larger than the current total world population. This will lead to considerable challenges for the planning and the construction sector, since roughly the same amount of infrastructure will be added in the next three decades as has been built since the beginning of industrialization. In addition, most of the existing infrastructure will have to be renewed in the same period. “For example, if the expansion of infrastructure has a CO₂ footprint that is similar to that of the current infrastructure of cement, steel and aluminum in industrialized countries, the construction of new infrastructures in developing countries and emerging economies alone could lead to around a third of the total available CO₂ budget if the temperature increase is to be limited to 1.5°C.”¹

In addition to the technical aspects regarding CO₂ saving solutions, strategic concepts for communication and cooperation are crucial for success in large-scale and structural important projects. Whereas building a house has become a manageable task, things become much more complicated when considering the urban environment and wider interests such as energy efficiency and other relevant factors of climate protection. The master program Building Sustainability focusses therefore not only on technical and economic perspectives but also aims at imparting basic knowledge in other relevant disciplines. This means that the scope of the program is both broad and specific at the same time. The combination of technology, management, and sustainability-related topics is therefore, a unique opportunity for young professionals to extend their skills and prepare for important planning and construction related team functions in this huge challenge of the 21st century.

Whereas the Building Sustainability program is new, there is already plentiful experience in conducting practice-orientated master programs on the EUREF campus. The first program started in October 2012, was taught in German, and focused on energy-efficient construction and operation of buildings. As a Master of Science, it was an interdisciplinary program with a very specific focus. It turned out, however, that this subject matter needs a broader scope. Two other Master programs – European and International Energy Law (Master of Business Law) and Energy Management (MBA) – also showed high international demand in the field of energy and sustainability. Therefore, current, and former students, teachers, and professionals re-designed the program and created Building Sustainability (MBA) with a schedule that focusses not only on engineers and architects but also on urban planners, economists, and project managers.

The idea is that sustainable project results can only be achieved in extensive cooperation of all stakeholders, considering economic, ecological, social, and cultural aspects. Managing and moderating such a cooperation is one of the major challenges of implementing sustainability in planning and building projects of all scales. The

¹ WBGU – German Advisory Council on Global Change (2016): Humanity on the move: Unlocking the transformative power of cities. Summary. Berlin: WBGU

program aims therefore on enabling students to understand the complexity of sustainable planning and management processes and to develop solutions accordingly. This will happen in modules with different approaches: some will teach facts and numbers, others will facilitate connections between different fields and the soft skills of mediating between them, and some are designed to apply these competences to practical projects.

Graduates will be able to moderate and manage complex projects in the construction, real estate, and planning sector. The program provides the knowledge and skills for assessing projects from technical, ecological, and economic perspectives and for creatively finding solutions to consider the varying stakeholders' interest, in teams or independently. Graduates will either be able to enter the labor market in both the private and public sectors or continue with postgraduate studies.



The course program and structure

This Master program in Building Sustainability is a comprehensive, interdisciplinary course for those who plan a career in real estate project planning and management with a focus on implementing sustainability.

In addition to their own engineering, planning, architecture or economic studies, participants will gain economic, technical and management skills tailored to the planning and building sector, and will be prepared for a management career in leadership positions across the boundaries of their own fields. In addition to sector-specific fundamentals, the program includes project and lifecycle management modules as well as a global perspective regarding different approaches to energy efficiency.

The MBA Building Sustainability is taught over a period of three semesters. The semesters include lectures, tutorials, practical projects as well as excursions. The program will be completed in the 3rd semester with a master thesis.

Modules

Module 01: Technology

Basic physics and chemistry, physics of the building envelope, heating, ventilation and air conditioning, hydraulic systems, power generation, distribution and use, building automation, calculation methods for energy balance.

Module 02: Economics

Concepts of micro and macroeconomics, supply and demand, market systems, market regulations, capitalism as an economic system, banks and inflation.

Module 03: Business

Valuation, corporate accounting, corporate finance, liquidity, marketing & sales, organizational behavior, sustainability as a business model

Module 04: Law

Business law, construction and planning law, international and European public procurement law, renewable energy and energy efficiency law.

Module 05: Management

Business models and plans, small group communication, leadership, corporate social responsibility, conflict management, risk and change management, project management

Module 06: Lecture Series

Technological, social, and ecological dimensions regarding challenges in the planning and building/construction processes

Module 07: Interdisciplinary Project

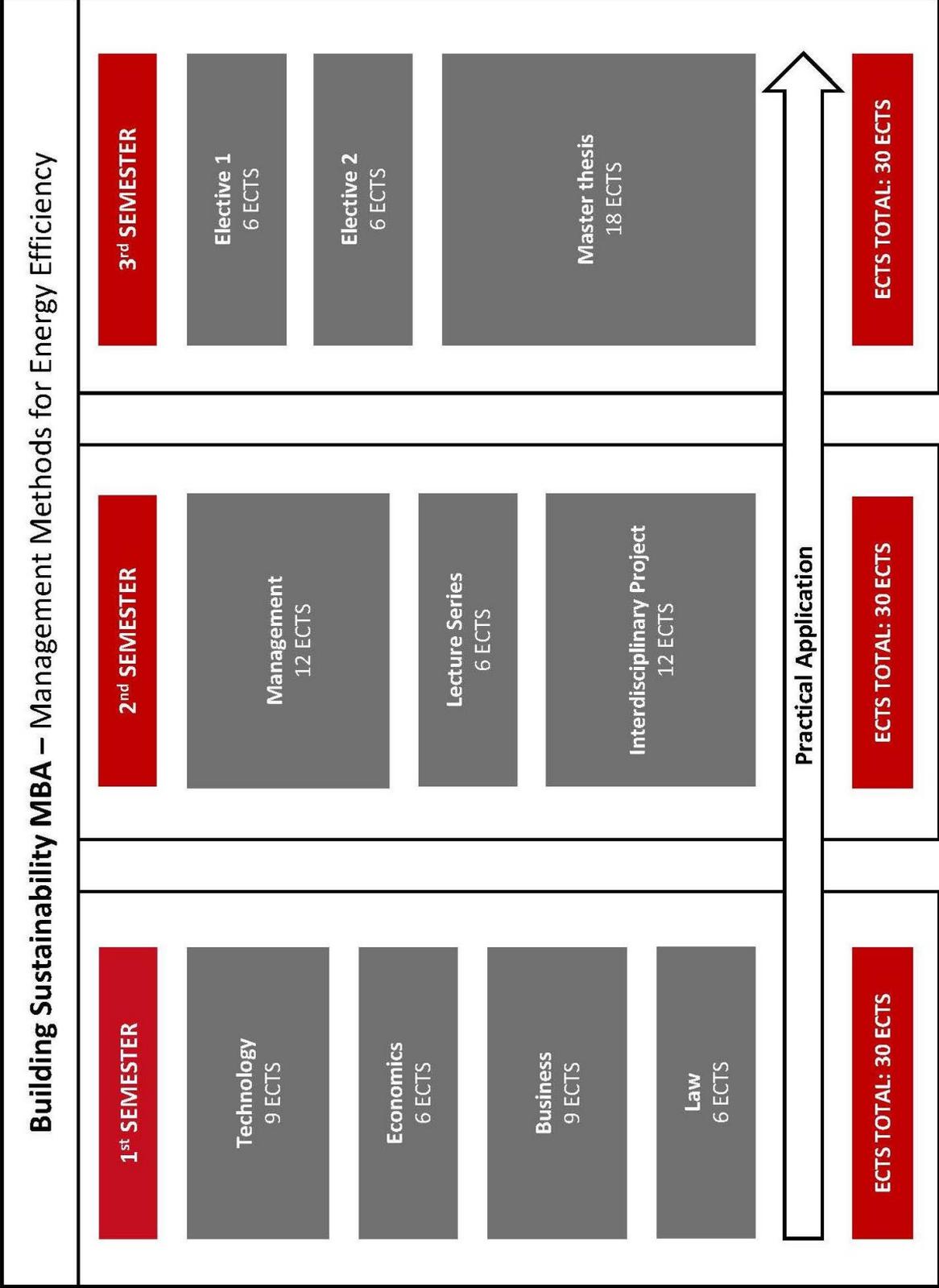
Project designed to apply all the knowledge learned in the previous modules

Module 08: Electives

Integration of Renewable Energies, Managing Sustainable Innovations, Energy-Efficient Societies, Sustainable Urban Planning



Schedule



Lecturers& Tutors

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Academic Director

Building Sustainability – Management Methods for Energy Efficiency MBA

master-in-energy.com



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Application for the master program

You can find more information about the application procedure online on our website:

<http://master-in-energy.com>

The number of students is limited to 30 per year. An admissions committee will make determinations based on the results of former studies, the academic profile, and further relevant qualifications, which were attained outside of the university.

The application deadline is **April 30th** of each year for a start in October of the same year.



You can send your application via the website, via email, or via postal service.

Academic direction and master program team

Academic directors:

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Prof. Dr. Hans-Liudger Dienel

Administration:

Laura Lehmann

Course Coordinators:

Mariam Elsheikh, M.Sc.

Phillip Hebert

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