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# DOKTORSKI ŠTUDIJ PROSTORSKEGA NAČRTOVANJA NA DUNAJSKI TEHNIŠKI UNIVERZI

## DOCTORAL STUDIES IN SPATIAL PLANNING AT THE TECHNISCHE UNIVERSITÄT WIEN

Ko bodoči/a študen...

In the year 1902 the Technische Universität Wien awarded the first doctoral degrees. Nowadays the doctoral programme usually lasts for six semesters. In addition to the dissertation, the current standardised programme for doctoral students stipulates that a total of 180 ECTS of modules (162 ECTS of which are the dissertation) must be completed. The doctoral programme is assessed in the viva voce, a general examination by a committee involving defence of the dissertation by the candidate. Graduates of a doctorate in the technical sciences are awarded the title Dr. techn., graduates of a doctorate in the natural sciences are awarded the title of Dr. rer. nat. and graduates of a doctorate in the social and economic sciences are awarded the title of Dr. rer. soc. oec.. In the Faculty of Architecture and Planning the Dr. techn. is the dominant awarded title.

The curriculum of Spatial Planning (at that time a five years programme awarding the academic title Dipl.-Ing.) was founded in the seventies. Already in the year 1972 the first Dr. techn. in the field of Spatial Planning was awarded. Since now 80 doctoral students graduated. Actually about 70 students are registered in a doctoral programme in Spatial Planning. The topics include various fields of Spatial Planning and are in general free of choice by the candidate and finally negotiated with the advisor of the thesis. In the last years the Faculty of Architecture and Planning developed with other faculties, universities and institutions the following four specific doctoral programmes:

International Doctoral College: Spatial Research Lab

This college was established 2007 together with HafenCity University of Hamburg, Karlsruhe Institute of Technology, Swiss Federal Institute of Technology Zurich, University of Stuttgart and the Technical University of

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Munich. The International Doctoral College is open to excellently qualified candidates from a wide range of spatially relevant disciplines who would like to engage in an intensive, academically creative discourse on difficult, spatially relevant problems within the framework of a doctoral thesis (PhD) and with a view to elaborating viable and innovative attempts at solutions.

The first College was concentrated on perspectives of Spatial Development in European Metropolitan Areas. Selected research results are published in *Forschungslabor Raum\_Das Logbuch*<sup>1</sup>.

The framework theme for the second Doctoral College in the period 2013 – 2016 is “Transformation of Cities and Landscapes”. The diverse changes taking place in living environments with the predominantly inward focus on infill development, changes in the fields of mobility, landscape, demographics, energy, and not least climate change, call for integrated, demonstrable strategies and concepts for comprehensive, holistic transformation. In order to explore and delimit their research topics the doctoral students at the various universities and institutes of higher education will analyse significant spatial issues relating to the transformation of cities and landscapes of national and European importance in Switzerland, Germany and Austria (<http://www.forschungslabor-raum.info>).

### Doctoral College: Energy and Resource Awareness in Urban and Regional Development

This Doctoral College is part of the Research Focus “Energy and Environment” of the Technischen Universität Wien and offers 10 doctoral positions under specific supervision of professors from the Faculty of Architecture and Planning. It started 2013 and concentrates on the following ten different topics on Energy and Resource Awareness:

- Infrastructure economics and policy, and sustainable resource consumption: Modelling and overcoming The unsustainable “lock-in”
- Urban and regional planning and renewable energies – strategic challenges, potentials, tools And implementation
- Low - carbon strategies in urban and regional planning – challenges, needs, potentials, tools and implementation
- Smart City as a Socio - technical innovative process
- Strategic Planning of energy efficient Smart Cities and Regions
- Social behaviour in the fields of energy consumption and mobility
- Strategic spatial concepts for an energy - conscious infill development Of settlements
- Model - based computational decision support for Large -scale energy efficiency measures in the built urban environment
- Promoting the integration of energy and mobility policies through governance - structures and processes
- Mobility Management in the Smart City Context (<http://raum.tuwien.ac.at>)

<sup>1</sup> Forschungslabor Raum -Das Logbuch (2012). Internationales Doktorandenkolleg - Forschungslabor Raum, ISBN 978-3-86859-127-9

## Doctoral College: Urban – Energy and Mobility Systems

In Cooperation with the Wiener Stadtwerke Holding AG (Vienna Public Utilities Company) the course entitled »Urban Energy and Mobility Systems« (URBEM-DK) has been developed and offered 10 doctoral positions. The goal is the research and development of scenarios for the path to a »sustainable, supply-secure, affordable and liveable city«, using the example of the city of Vienna with an integrated and inter-disciplinary approach. Six faculties from the University work together in this college.

The College includes modelling of the Vienna passenger transport system, analysis of the energy patterns of the building stock, simulation of the distribution networks, storage, feed-in points for thermal energy and gas and electricity, and the study of the ICT requirements by urban Smart Grids. Building on this, perspectives will be developed that will arise across this whole system over the coming centuries, in particular with regard to the interface with buildings-related energy supply and demand (<http://urbem.tuwien.ac.at>).

## PhD Programme: CI-ENERGY Smart cities with sustainable energy systems

Just recently the University joined the CI-Network and offers two doctoral positions. The CI-ENERGY Marie Curie Initial Training Network (ITN) aims to train young scientists to develop urban decision making and operational optimisation software tools to minimise non-renewable energy use in cities. The training will be carried out by a close collaboration of six of the best academic research centres and four leading industrial companies from the energy and software technology sector (Siemens, WienEnergie, EDF/EIFER, and IES). The research fellows will apply their results in two case study cities (Geneva and Vienna), which were chosen for their very ambitious sustainability goals. The CI-ENERGY network will be a highly multi-disciplinary coordinated PhD programme on urban energy sustainability, covering the key challenges in cities related to a low carbon future (<http://www.hft-stuttgart.de>).

As shown there is a trend to offer thematic Colleges for interested doctoral students. This strategy has the big advantage that the students can develop their theses in a "research cluster" with other universities and institutions in an international environment. Through these clusters it is also easier for the University to offer at least partly financed doctoral research work. This is a big advantage in the competition among the universities to get the best "young researcher" in this field. Nevertheless the appropriate approach that a doctoral student formulates his research question is very much supported in the field of Spatial Planning. It guarantees a wide spectrum in doctoral research.

The Faculty of Architecture and Planning is very much encouraging all kind of activities, which help to bring forward doctoral research. Especially in the – compared to other scientific disciplines – young discipline of Spatial Planning the promotion of doctoral degrees is considered more and more as very important element for the future scientific development.

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