

# **Vorlesungsverzeichnis**

English-taught courses of the Faculty

Sommer 2023

Stand 18.10.2023

**English-taught courses of the Faculty**

**3**

## English-taught courses of the Faculty

### 119122403 Parametric Urban Design and Analysis II

**E. Fuchkina, S. Schneider, I. Osintseva**

Veranst. SWS: 2

Seminar

Di, wöch., 13:30 - 15:00, Belvederer Allee 1a - Allg. Medienpool 003, 04.04.2023 - 04.07.2023

#### Beschreibung

Cities are complex human made objects. They consist of thousands of elements and need to satisfy numerous human needs. The definition of urban form (street network, plots, building volumes) is a crucial step in the planning of cities because it has the longest lasting effect on their social, economic and ecological performance. Thus, this step needs to be undertaken with greatest care. In this course we will deal with computational methods to support this process.

The course extends the knowledge and methods you learned in PUDA I. You will learn and train advanced parametric modeling techniques and further analysis methods as well as basic knowledge about statistics to study relationships between urban form and its manifold functions.

You apply the learned skills in an urban planning project for new towns in Ethiopia (IUDD Study Project "Circular Urbanism"). It is expected that the participants have absolved the course "Parametric Urban Design and Analysis" from the previous semester.

#### Voraussetzungen

Studiengänge: Master Integrated Urban Development and Design (IUDD)

### 119122703 European Spatial planning

**G. Bertram, T. Potezica**

Veranst. SWS: 2

Seminar

Do, unger. Wo, 09:15 - 12:30, Belvederer Allee 5 - Seminarraum 008, 13.04.2023 - 20.04.2023

Do, wöch., 09:15 - 12:30, Marienstraße 9 - Seminarraum 203, 27.04.2023 - 06.07.2023

#### Beschreibung

The seminar "Spatial planning" is part of the module "European cities". It is specifically designed for students of the master program "European Urban Studies, M.Sc." but is open to other master programmes (Urbanistik, IUDD, Erasmus...). The aim of the seminar is to develop an understanding and a wider reflexion of the diversity of planning cultures in Europe through the analysis of models, theories, key concepts and case studies. We will explore the topic through a set of questions: what are the main principles of spatial planning in European countries? What are the main, and somehow contradictory, challenges spatial planning must face? To what extent is spatial planning able to maintain social and territorial cohesions and to integrate the sustainability imperatives? What are the political and planning responses and what kind of instruments are developed?

The methods of the seminar will be a combination of lectures by the instructors, student presentations and discussions. We will look at the following countries: Serbia, the Netherlands, Great Britain and Germany. To explore contemporary challenges students will give presentations on specific projects within these countries. Finally, we will look at key concepts of spatial planning on the scale of Europe.

**Final grade:** active participation, individual paper, presentation

**Language:** English

**Appointment:** Thursdays, 9.15-12.30: 13.4., 27.4., 1.6., 8.6., 22.6., 29.6., 6.7.

**Start:** 13.04.2023

**Where:** Belvederer Allee 5, Room 008

**Credit hours:** 2

**ECTS credits:** 3

**Max:** 20 Students.

The seminar is compulsory for the students of the Master "European Urban Studies". If you are not involved in the EUS Master and if you want to attend the seminar, please contact Tanja Potezica **first:** [tanja.potezica@uni-weimar.de](mailto:tanja.potezica@uni-weimar.de)

#### **Bemerkung**

**Appointment:** Thursdays, 9.15-12.30: 13.4., 27.4., 1.6., 8.6., 22.6., 29.6., 6.7.

**Start:** 13.04.2023

**Where:** Belvederer Allee 5, Room 008

**Credit hours:** 2

**ECTS credits:** 3

**Max:** 20 Students.

The seminar is compulsory for the students of the Master "European Urban Studies". If you are not involved in the EUS Master and if you want to attend the seminar, please contact Tanja Potezica **first:** [tanja.potezica@uni-weimar.de](mailto:tanja.potezica@uni-weimar.de)

#### **Voraussetzungen**

The seminar is compulsory for the students of the Master "European Urban Studies". If you are not involved in the EUS Master and if you want to attend the seminar, please contact Tanja Potezica: [tanja.potezica@uni-weimar.de](mailto:tanja.potezica@uni-weimar.de)

### **121123302 Urban Modeling and Simulation (UMS) - Advanced**

**R. König**

Seminar

Do, wöch., 06.04.2023 - 06.07.2023

Veranst. SWS: 2

#### **Beschreibung**

Im Rahmen des Seminars werden die Teilnehmer in Methoden der Stadtsimulation eingeführt. Wir werden uns mit der Modellierung komplexer räumlicher Systeme auf regionaler und urbaner Ebene befassen. Es werden Analyse zur Nutzung urbaner Strukturen eingeführt (z.B. Fußgängerströme oder ökonomische Potentiale) sowie Modelle für Interaktionen von Flächennutzungen vorgestellt. Es wird vorgestellt, wie mittels System Dynamics Modellen zeitliche Veränderungen von „Stocks and Flows“ simuliert werden können.

#### **Bemerkung**

Die im Rahmen von Online-Seminaren vermittelten Kenntnisse werden in Konsultationen vertieft und anhand mehrerer Übungsaufgaben belegt. Es sind keine technischen Vorkenntnisse erforderlich.

Appointment: Thursday (integrated in IUDD planning project) // Termin: Donnerstag (integriert in IUDD Planungsprojekt)

## 121123701 GIS for Integrated Urban Development Part II

**M. Mousa**

Veranst. SWS: 2

Seminar

Mo, wöch., 13:30 - 15:00, Bauhausstraße 9c - Arbeitsraum 004, 03.04.2023 - 03.07.2023

### Beschreibung

Geographic Information Systems (GIS) are a useful tool for multiple disciplines and user groups. In urban development and planning, different constituencies like local authorities interact through GIS e.g. applying it in environmental agencies, transportation, energy, resource and waste management, retail, disaster management, and socio-economics. Collecting, managing, analysing and visualising data with GIS as an information sharing tool can help in different stages of planning processes – from identifying problems to evaluating different planning proposals. Working with GIS allows to create easy understandable maps and to enable communication processes.

This course introduces different spatial analysis of Vector and Raster data based on ESRI ArcGIS Toolbox tools. For developing a complex process through different tools, ModelBuilder will be applied to connect different tools and automates workflow based on different variables and parameter. The participants will be introduced to ModelBuilder interface, proprieties and how to create, run and edit the Model. Various spatial analysis qualifications will be gained such as where to allocate each use/service based on pre-identified criteria.

Basic knowledge of ArcGIS is required for the course such as create, edit and deal with Geodatabases, feature dataset, feature classes, data selection and visualization.

The course will be assessed based on assignment and final project where participants create their own models and present it. This will be based on an excursion to Chemnitz in the second half of the semester where participants will apply their mapping capacities in GIS in the context of a pedestrian analysis.

## 121223802 Parametric Energy Modelling and Analysis: Introduction to energy modelling in the urban context

**J. Becker, R. König**

Veranst. SWS: 2

Seminar

Fr, wöch., 09:15 - 10:45, 07.04.2023 - 07.07.2023

### Beschreibung

In this module, urbanist and civil engineer Jakob Becker will give insights into energy modelling and simulation in the building context using the programming environment Grasshopper for Rhino.

First, we introduce the students to the basics of the visual programming environment Grasshopper for Rhino (this course does not require experience in working with Grasshopper), of energy-focused architecture and of working with energy and weather data. Afterwards, the students are guided through different examples of energy simulation applied in urban contexts with the main focus lying on solar radiation simulation and adjacent fields, such as daylight simulation, energy gains calculation, location optimization and geometry definition based on solar radiation and climatic conditions.

This module will give insights into solar urban planning principles and aims to raise the awareness of integrating local climatic conditions into the process of urban planning.

The course is held at the university as well as online. Teaching language is English.

## 122112401 Parametric Architecture (Ba)

**E. Fuchkina, I. Osintseva, S. Schneider**

Veranst. SWS: 2

**Übung**

Mo, wöch., 15:15 - 16:45, Belvederer Allee 1a - Allg. Medienpool 003, 17.04.2023 - 03.07.2023

**Beschreibung**

Parametric Modeling is a powerful tool in the architectural and urban design process. By creating models, that do not only represent the geometry but rather relationships between the geometrical elements it becomes possible to create numerous variations of a design concept. These design variants can be analysed and optimized for certain criteria. Thereby the designer gains a deeper insight into his/her design concept.

In this seminar you will learn the basics for parametric modeling using the visual programming software Grasshopper for Rhino. After this basic training you apply the methods to an own design concept (architectural or urban scale). For the course no prior knowledge is required.

**Bemerkung**

Mo, 15:15 - 16:45 Uhr

Ort: Computerpool EG, Belvederer Allee 1a

Umfang: 3 ECTS

**Voraussetzungen**

Studiengänge: Bachelor Architektur und Bachelor Urbanistik

### 122122401 Integrated Urbanism - Adaptive Planning Strategies for Rural-Urban Transformation in Ethiopia.

**S. Schneider, R. König, P. Schmidt, M. Bielik**

Veranst. SWS: 10

Projektmodul

Do, wöch., 09:15 - 18:30, 06.04.2023 - 06.07.2023

**Beschreibung**

The transformation from a mainly agricultural society to industrialisation that is faced these days in Ethiopia is linked to substantial changes of the country's rural and urban areas. With these shifts, the processes of urbanisation and expectations towards modernisation is seen as a chance to create new and adaptive urban planning proposals that meet specific needs and conditions of the Ethiopian development context in Sub-Saharan Africa. While the World Bank is promoting rapid economic growth for Ethiopia, still the country is one of the poorest countries in the world, and the question arises in how far urban design and planning can create concepts and flexible urban models that are reactive enough to stimulate different scenarios responding for balanced development.

One of the main frameworks to create such a balance for emerging cities are the United Nations Sustainable Development Goals (SDG). Different key factors like food security, energy, water and sanitation are linked to resource questions of material and land and how those can be influential on the development of prospective cities. Thus, for the development of new towns in rapidly urbanizing regions the understanding of material flows and circulation within the urban system is crucial when it comes about any building activity that determines the urban form and what we finally experience as urban, including open and public space and healthy living conditions.

To better understand how such flows of material resources and energy are linked to building activities in rural urbanisation processes and their impact on the existing environment, in our study project, we are referring to urban metabolism as a framework for urban design and planning of small cities.

Participants will be analysing urban patterns and flows of small cities, learn about the context between urban metabolism and its spatial implications and apply tools and methods for a spatial analysis and finally implement that knowledge in spatial models and concepts to simulate possible development scenarios.

**Voraussetzungen**

Studiengänge: Master Integrated Urban Development and Design (IUDD)

**122122403 Parametric Architecture**

**E. Fuchkina, I. Osintseva, S. Schneider**

Veranst. SWS: 2

Seminar

Mo, wöch., 15:15 - 16:45, Belvederer Allee 1a - Allg. Medienpool 003, 17.04.2023 - 03.07.2023

**Beschreibung**

Parametric Modeling is a powerful tool in the architectural and urban design process. By creating models, that do not only represent the geometry but rather relationships between the geometrical elements it becomes possible to create numerous variations of a design concept. These design variants can be analysed and optimized for certain criteria. Thereby the designer gains a deeper insight into his/her design concept.

In this seminar you will learn the basics for parametric modeling using the visual programming software Grasshopper for Rhino. After this basic training you apply the methods to an own design concept (architectural or urban scale). For the course no prior knowledge is required.

**Bemerkung**

Mo, 15:15 - 16:45 Uhr

Ort: Computerpool EG, Belvederer Allee 1a

Umfang: 3 ECTS

**Voraussetzungen**

Studiengänge: Bachelor Architektur und Bachelor Urbanistik

**123112401 Parametric Architecture - Advanced (Ba)**

**E. Fuchkina, I. Osintseva, S. Schneider**

Veranst. SWS: 2

Übung

Mo, wöch., 15:15 - 16:45, 17.04.2023 - 03.07.2023

**Beschreibung**

This course is an upgrade to the "Parametric Architecture" seminar. If you want to deepen your knowledge, you take this course additionally and get extra tasks in parallel to the ones of the basic course.

**Bemerkung**

Mo, 15:15 - 16:45 Uhr

Ort: Computerpool EG, Belvederer Allee 1a

Umfang: 3 ECTS

**Voraussetzungen**

Studiengänge: Bachelor Architektur und Bachelor Urbanistik

### 123122401 Parametric Architecture - Advanced

**E. Fuchkina, I. Osintseva, S. Schneider**

Veranst. SWS: 2

Seminar

Mo, wöch., 15:15 - 16:45, 17.04.2023 - 03.07.2023

**Beschreibung**

This course is an upgrade to the "Parametric Architecture" seminar. If you want to deepen your knowledge, you take this course additionally and get extra tasks in parallel to the ones of the basic course.

**Bemerkung**

Mo, 15:15 - 16:45 Uhr

Ort: Computerpool EG, Belvederer Allee 1a

Umfang: 3 ECTS

**Voraussetzungen**

Studiengänge: Bachelor Architektur und Bachelor Urbanistik

### 123123002 Stories of technology and the worlds they make

**D. Perera**

Veranst. SWS: 2

Seminar

Mo, wöch., 11:00 - 12:30, Geschwister-Scholl-Str.8A - Seminarraum 105, 17.04.2023 - 03.07.2023

**Beschreibung****Description:**

Stories of our technologies have always been central to our ways of world making.

With the growing power of certain forms of hegemonic technologies (ex: processes of digitalization) many scholars have called for questions of technology within ecological transformation to be considered in terms of multiple ontologies, 'a world where many worlds fit'. This framework presents a direct challenge to universalist ideas of technology perpetuated by modernity where certain faulty assumptions embedded in technologies are exported, internalized, and reproduced across contexts. Those of us operating in the fields of architecture, design, urbanism, media studies have yet to adequately reflect upon the ways in which we are implicated in cultivating or suppressing alternative kinds of technological thought, practices, stories.

This semester we will get together as a *reading group* to collectively read and explore *ten key texts* emerging from diverse fields of philosophy, media studies, computational studies, cybernetics, transformations research, decolonial studies, design and architecture that explore the relationships between stories, technologies and worldmaking in different ways. It is hoped that these readings would provide the participants with a conceptual toolbox to think through some of the most pressing questions related to technology and ecology of our times. As a part of the assignment the participants will get to design a framework for exchanging stories about alternative technological futures.



**Bemerkung**

Note: The reading group is related to a series of activities, online workshops and events in Germany and the UK in the context of a DFG research project. The participants will be able to design these workshops and participate in these events actively.

If you have any questions about the course contact: [dulmini.perera@uni-weimar.de](mailto:dulmini.perera@uni-weimar.de)

**Voraussetzungen**

Master 1. FS