

Information Architecture

Mondays 14:00 – 18:00

063-1357-14 G | 4 ECTS*

Digital Urban Simulation

A solid knowledge of computational methods is an increasingly important key competence for future architects or urban planners. In this course you will learn how to analyze and generate spatial configurations with advanced computational methods.

In a series of theory lectures we explore how designing and planning of cities could become evidence based by using scientific methods. Various exercises will provide training for your skills in working with state-of-the-art yet office proven design tools (Depthmap, Ecotect, and Rhino/Grasshopper). In an integral project work, you will deepen your knowledge in spatial analysis and simulation methods such as Space Syntax using Depthmap software and environmental analysis with the program Ecotect. In addition you will acquire skills for using analysis methods for generative design processes. Therefore we introduce you into the parametric design software Grasshopper for Rhino 3D.

Based on the methods introduced during the semester, you will learn and understand different effects of planning and design interventions on urban life. At the end of the course you will be able to interpret analysis and simulation results, and to apply correspondent computational methods for your own planning projects.

Where:

Lecture, HIT F22 - Value Lab
Exercise, HIT H12

When:

Mondays 14:00 to 18:00

Supervision:

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- 22.09.2014 Introduction to the course
E1 - Rhino/Grasshopper tutorial
- 29.09.2014 Space syntax I
E2 - Convex Map, Axial Map of a small area
- 06.10.2014 Space syntax II
E3 - Depthmap & GIS: Prepare Data -> Import Data -> Analysis methods
- 13.10.2014 Space syntax III
E4 - Rhino/Grasshopper
- 20.10.2014 Seminar week (no lecture)
- 27.10.2014 Microclimate analysis I
E5 - Ecotect Tutorial I. Analysis of a small urban area.
- 03.11.2014 Microclimate analysis II
E6 - Rhino/Grasshopper
- 10.11.2014 Generative systems workshop
E7 - Generative techniques
- 17.11.2014 Empirical studies
E8 - Collect data (evaluate existing materials)
- 24.11.2014 Best practice examples - Guest lecture
Final consultation
- 01.12.2014 Final iA critique
Combined critique with the other iA courses

* Total 120 h = 4 ECTS

Exercises 25% (documentations)

Presentation 25% (project at the end)

Written documentation 50% (project)

The most recent outline will be found on www.ia.arch.ethz.ch