

# 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 more 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 corresponding computational methods to 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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16.02.2015	Introduction to the course E1 - Rhino/Grasshopper tutorial
23.02.2015	Space syntax I E2 - Convex Map, Axial Map of a small area
02.03.2015	Space syntax II E3 - Depthmap & GIS: Prepare Data -> Import Data -> Analysis methods
09.03.2015	Space syntax III E4 - Isovist analysis
16.03.2015	<b>Seminar week (No lecture)</b>
23.03.2015	Microclimate analysis I E5 - Ecotect Tutorial I. Analysis of a small urban area.
30.03.2015	Microclimate analysis II E6 - Rhino/Grasshopper
20.04.2015	Generative systems workshop
27.04.2015	Empirical studies E7 - Collect data (evaluate existing materials)
04.05.2015	Best practice examples - Guest lecture Final consultation
11.05.2015	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](http://www.ia.arch.ethz.ch)