

AR-402(k)

**Studio MA2 (Huang)**

Huang Jeffrey

Cursus	Sem.	Type
Architecture	MA2, MA4	Obl.
Mob. AR	E	Opt.

Language of teaching	English
Credits	12
Withdrawal Session	Unauthorized Summer
Semester Exam	Spring During the semester
Workload	360h
Weeks	14
<b>Hours</b>	<b>6 weekly</b>
Lecture	2 weekly
Project	4 weekly
<b>Number of positions</b>	
<b>It is not allowed to withdraw from this subject after the registration deadline.</b>	

**Remark**

Inscription faite par la section

**Summary**

The studio examines the effects of artificial intelligence on architecture and cities. We explore data-driven design processes by the use of algorithmic and parametric tools that take into consideration geographical, economical, personal, image, political, ecological parameters.

**Content**

The advent of new digital technologies has had a twofold impact on architectural thinking and urban design, transforming, on one hand, the processes for form generation and design production through algorithmic and parametric technologies, and, on the other hand, enabling an escape from the static fate of the built environment by facilitating dynamic interaction between inhabitants and their surrounding. Our interest in the orientation "Form + Data" is to explore meaningful form generating processes by the use of data-driven design, algorithmic and parametric tools. While developing a base of digital evidence specific to each site, each studio will explore novel means of deploying this data to support design and generate form.

The intellectual aim of the studio is to question the extent by which the data-scape can support architects to generate urban and architectural form. Our interest is directed at the decoding and recoding of two distinct domains of knowledge: exteriority which represents a many-layered geographic condition and anteriority which represents the embedded knowledge of local architectural typologies and systems. While the exteriority of geographic data is crucial to our research, we place a primary emphasis on the generative potential of typology- what we have called "growth typologies". Decoding anterior form and then recoding and deploying it across new territories allows us to challenge the role of architecture in urban developments of increased scale and complexity.

**Keywords**

- Architectural form
- Data-driven design
- Artificial intelligence
- Urban design

**Learning Prerequisites**

**Required courses**

N/A

**Recommended courses***AR-401(Y) Théorie et critique du projet MA1 (Huang).***Learning Outcomes**

By the end of the course, the student must be able to:

- Interpret the morphogenetic parameters and other issues of relevance to the project using drawings and diagrams.
- Critique a specific project brief and a specific context and respond with a meaningful data-driven design concept.
- Translate a data-driven design concept into meaningful architectural propositions at appropriate scales and levels of granularity.
- Produce coherent architectural representations and models at sufficient levels of detail.
- Formulate the morphogenetic narrative and create convincing arguments for the design propositions.
- Develop convincing final diagrams, drawings, renderings, simulations, physical and digital models.
- Interpret the site-specific parameters and other issues of relevance to the project using drawings and diagrams.

**Transversal skills**

- Design and present a poster.
- Collect data.
- Make an oral presentation.

**Teaching methods**

- Presentations
- Mapping exercises
- Hands-on design activities
- Design reviews
- Group projects

**Expected student activities**

- Architectural projects will be developed individually (or exceptionally in groups of 2).
- Some group work may occur in the analysis stages.

**Assessment methods**

Projects will be reviewed and assessed based on:

- (1) their conceptual strength and innovation,
- (2) the coherence and resolution of their architectural translation,
- (3) their representative clarity and expressive power, and
- (4) the persuasiveness of their communication, both orally, and through the physical and digital artifacts.

**Supervision**

Office hours                      Yes

Assistants	Yes
Forum	No

## Resources

### Bibliography

Huang, J. (2015), Growth Typologies, Localities and Defamiliarisation: Experiments with Artificial Urbanism in Sichuan, Guangzhou and Beijing. *Archit Design*, 85: 70-75. doi: 10.1002/ad.1980.

### Ressources en bibliothèque

- [Growth typologies, localities and defamiliarisation / Huang](#)

### Websites

- <http://ldm.epfl.ch>