

Syllabus: Understanding Urban Ecologies preliminary version



Instructor: Dr. Maximilian Schich, Associate Professor
ATEC6389.001.14F - Topics in Arts and Technology

General information

The course meets in *Fall 2014*, *Thursdays 4:00–6:45pm* in room *ATC 3.205*.

Coursebook: <http://go.utdallas.edu/atec6389.001.14f>

Course website: <http://elearning.utdallas.edu> / tbd

Instructor contact

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Email note: **Please prefix ATEC6389.F14 to your email subject for prompt attention!**

Office hours: Please meet me right after the course or make an appointment via email.

Mission

In this course we aim to explore, analyze, and understand real and virtual urban environments from the perspective of urban aesthetics, urban complexity, urban history, urban planning, urban scaling, urban sensing, economics, geoscience, and human mobility, including navigation.

Participants are encouraged to bring a wide variety of interests and expertise to the table. Ideally our collaboration will include ATEC students that deal with, operate in, and aim to create authentic urban environments. Participants from the arts and humanities, business, data science, emerging media and communication, geoscience, economics, engineering, public policy, and social science are explicitly invited to add additional aspects, maximizing our common insight. In terms of outcome, we will work towards a common result in a series of weekly assignments.

The key objective of this course is a multidisciplinary understanding of urban ecologies.

Requirements

Interest in multidisciplinary research and collaboration. Active interest in charting uncovered terrain.

Selected sources

1. For virtual site visits: *Google Earth & Google StreetView* (ideally combined with a 3Dconnexion controller)
2. Good summary of the state-of-the-art: M. Batty, K.W. Axhausen, F. Giannotti, A. Pdznoukov, A. Bazzanni, M. Wachowitz, G. Ouzounis, and Y. Protugali, *Smart cities of the future*. EPJ Special Topics 214, 418-518 (2012). DOI: <http://dx.doi.org/10.1140/epjst/e2012-01703-3>
3. Brand new: M. Batty: *The New Science of Cities*. (Cambridge/MA: MIT-Press, 2013).
4. Science Special Issue: *Cities* (8 February 2008).
Video: <http://www.sciencemag.org/site/feature/misc/webfeat/cities/video/>
5. Still worth many looks: L. Benevolo: *The History of the City* (Cambridge/MA: MIT-Press, 1980).

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Assignments

Typical assignments are use variety of qualitative, quantitative, and creative methods, iterating weekly and feeding into a common product that can be presented to a wider audience. Suggestions to make progress in a given area of enthusiasm are welcome. As we do not focus on a specific method, you can choose and work with your favorite tools. Students are equally welcome to the course, no matter if they are *qualitatively skilled yet to make their first quantification*, if they aim to *"misuse" their game engine skills*, or if they are *data science wizards that aim to use High Performance Computing* to do analysis. Our goal is a *productive multidisciplinary conversation*.

The *academic calendar, project assignments, readings, and presentation requirements* are discussed and defined together and will feed into the final course summary. Preliminary summaries as necessary for the completion of assignments are provided to students via email.

Grading policy

Percentages: Assignments 45% + Attendance & Participation 45% + Presentation 10%

Grading scale: A = 100 - 90 B = 89 - 80 C = 79 - 70 D = 69 - 60 F = 59 - 0

Course & instructor policies (aka the fine print)

Class policies

- **All announcements will be sent via email.** Students are responsible for reading each announcement in detail.
- All students will participate in the discussion. Observers are expected to participate in the discussion equally.
- Students need to read all the assigned readings or complete homework prior to the class discussion. **Homework assignments need to be handed in before the respective class.** The nature of an assignment including deliverables will be defined together and announced in class or sent out as an announcement.
- Students have the **responsibility of backing up all their data, code, and preliminary work.** When writing code, it is highly encouraged to use a version control system, such as github, bitbucket, etc.
- Please contact the instructor if you have a disability that requires some arrangements so that appropriate arrangements can be made.

UT Dallas Syllabus Policies and Procedures

- The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.
- The principles of academic honesty and ethics will be enforced. **You should credit all your sources.** Plagiarism (see UTD syllabus policies for definition) in final presentations, papers, or posters results will not be tolerated.
- Excessive unexcused non-attendance (see UTD syllabus policies for definition) will lower your grade.

The descriptions and timelines contained in this syllabus are *subject to change* at the discretion of the instructor.

Instructor Bio

Dr. Maximilian Schich joined UT Dallas ATEC as Associate Professor in January 2013. He studied Art History, Classical Archaeology, and Psychology at LMU-Munich (M.A. 2001), HU-Berlin (PhD 2007), and Max-Planck in Rome (PhD-fellow 2002-2004). Since 1996, Maximilian also was a project consultant for large-scale cultural graph data. From 2008 to 2012 he explored the Ecology of Complex Networks in Art Research with Albert-László Barabási at Northeastern University and Dirk Helbing at ETH Zurich. He received generous funding from the Special Innovation Fund of the President of Max-Planck-Society (2008) and a Research Grant from German Research Foundation (2009-2012). Maximilian has collaborated, presented, and published in prestigious venues in Archeology, Art History, Computer Science, Complexity, Sociology, Physics, and Visualization. He is an Editorial Advisor at Leonardo Journal (MIT-Press) and chairs a popular symposium series on Arts, Humanities, and Complex Networks (14.5% acceptance). Maximilian was invited to SciFoo twice (2009/2013).