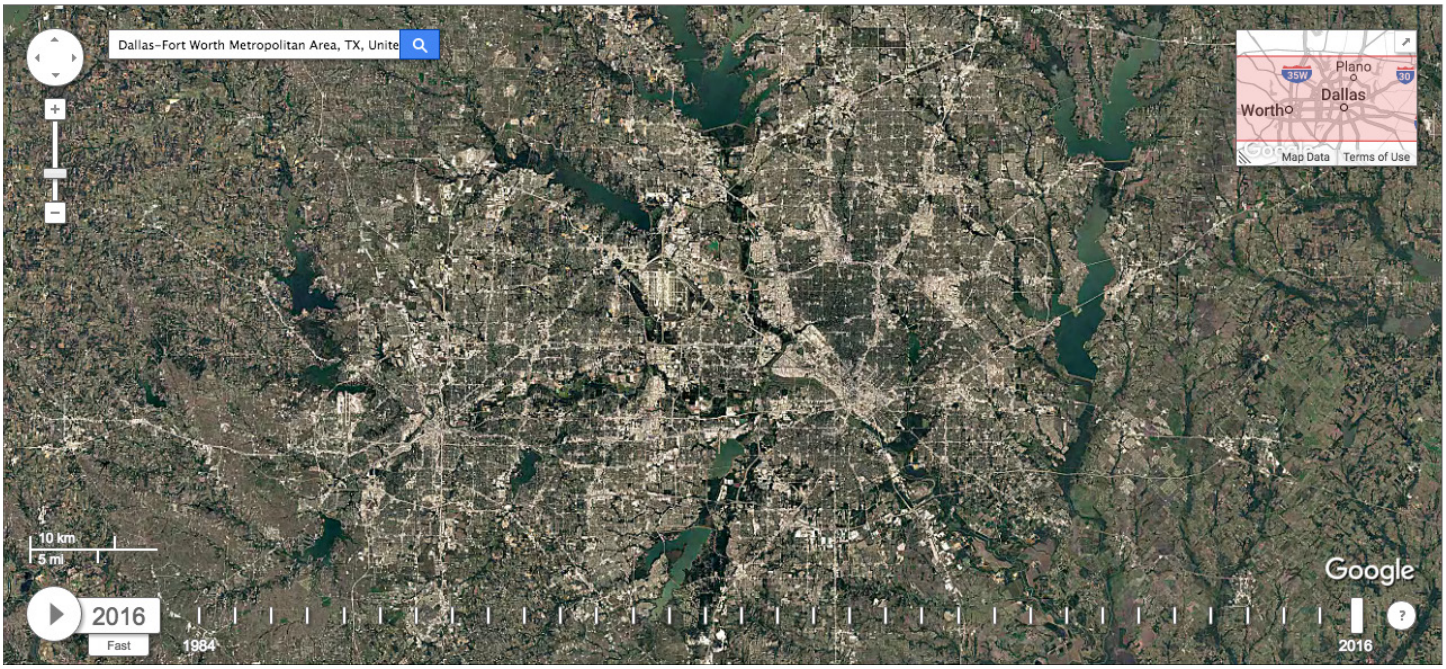
Syllabus: Understanding Urban Ecologies

Instructor: Dr. Maximilian Schich, Associate Professor
ATEC6389.003.17S



Source: earthengine.google.com/timelapse/

General information

The course meets in *Spring 2017*, *Tuesdays, 4:00pm–6:45pm* in room *ATC 4.906*
Course materials are available at https://utdallas.box.com/v/S17-ATEC6389-Urban-download
Assignment submission to https://utdallas.box.com/v/S17-ATEC6389-Urban-upload
Coursebook see http://go.utdallas.edu/atec6389.003.17s

Instructor contact

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Phone: +1-972-883-4334 – *Web:* http://www.utdallas.edu/atec/schich/ – *Email:* maximilian.schich@utdallas.edu
Office hours: Please meet me right after class or make an appointment via email.
Email subject prefix: [6389 Urban] (please use in all communication with the instructor)

Mission

In the ***Understanding Urban Ecologies*** course, we aim to explore, analyze, and understand real and virtual urban environments. In "virtual excursions" we will look at US cities, world cities, ideal cities, ancient cities, and imagined cities in films and computer games. With an eye to the latest literature, we will make high-bandwidth use of Google Earth in 3D and a large variety of map layers, from sources such as city-data, walkscore, foursquare, and many others. Participants are encouraged to bring a wide variety of interests to the table. Ideally the collaboration includes students in ATEC that deal with, operate in, and aim to create authentic urban environments, as well as students from the arts and humanities, business, data science, communication, geoscience, economics, engineering, public policy, and social science, in short all fields that are invested in understanding and creating places in which we all want to live. Throughout the course, we will work towards a common result in a series of brief assignments, collecting relevant material for discussion in class. The key learning objective is a broad overview and multidisciplinary understanding of urban ecologies.

Understanding Urban Ecologies feeds into the general ATEC 6389 course mission, that is the study of specific issues, problems, methods, or practices relevant to arts and technology.

Grading policy

Percentages: Attendance & Participation 45% + Assignments 45% + Presentation 10%
Grading scale: A = 100 - 90 B = 89 - 80 C = 79 - 70 D = 69 - 60 F = 59 - 0

Course calendar

2017-01-10	Session 01	Course introduction
2017-01-17	Session 02	Aspects of Urban Ecology
2017-01-24	Session 03	*US-Cities 1*
2017-01-31	Session 04	*US-Cities 2*
2017-02-07	Session 05	*World-Cities 1*
2017-02-14	Session 06	*World-Cities 2*
2017-02-21	Session 07	*Ideal Cities*
2017-02-28	Session 08	*Ancient Cities 1*
2017-03-07	Session 09	*Ancient Cities 2*
2017-03-14		Spring break (no class)
2017-03-21	Session 10	*Virtual Cities 1*
2017-03-28	Session 11	*Virtual Cities 2*
2017-04-04	Session 12	*City Systems*
2017-04-11		*Final source list due (two hours before class)*
2017-04-11		*Final project proposals due (two hours before class)*
2017-04-11	Session 13	Project proposal presentations 1
2017-04-18	Session 14	Project proposal presentations 2
2017-04-25	Session 15	Project proposal presentations 3
2017-05-09		*Final grades go online*

Assignments

(Bi)weekly assignment – Collect visual material for discussion and prepare to discuss it in class.

We will agree on specific (bi)weekly topics and assign them to individual students during class discussion.

Once you got your topic, the universal (bi)weekly assignment is
(a) to collect single-layer image files or single-page PDFs in a folder;
(b) to rename the folder and zip to YYYYMMDD-NetID####-Topicname.zip
(where YYYYMMDD is the presentation class date, NetID#### is your NetID, and Topicname is your topic)
(c) to upload the zip to *https://utdallas.box.com/v/F16-HUAS6312-upload* no later than 1 hour before class.

PS: When including dynamic sources such as websites, please always include screenshots or PDFs with the URL in the zip folder.
It makes sense to put such extra material in a "supplementary" subfolder within the zip.

Source list assignment – Create a source list.

(a) Prepare a source-list, containing four columns, including
(1) a unique image file name for each non-supplementary image or PDF in your weekly assignments;
(2) the original zip file name, indicating the assignment date, NetID, and Topicname;
(3) a full bibliographic reference for each file (Chicago style); and
(4) a valid URL, indicating the source website, the publication DOI, worldcat, or equivalent
(In case you shot the picture with your own camera, or so, write "[no URL]");
(b) Save the source list as a tab-separated (.txt/.tsv) or in Excel format (.xlsx),
using the file name 20170411-NetID####-Source-list.txt or ... .xlsx before the final deadline as given in the class calendar.
(c) Upload the source list, without zipping, to *https://utdallas.box.com/v/F16-HUAS6312-upload* before the deadline given in the class calendar.

PS: You do not have to hand in the source list every week, only once at the end of the semester. Of course, it makes sense to document as you go.

Final assignment – Create and present a project proposal.

(a) Prepare a two-page project proposal document, including (i) a project title, (ii) a 500 word summary; and (iii) a cover figure and caption, all on page one; as well as (iv) a list of five key references and a figure copyright notice on page two.
(b) Produce a slide-deck to briefly present your proposal in class.
(c) Save the proposal document and slides in PDF format with the file names NetID####-project-proposal.pdf and NetID####-project-slides.pdf
(where NetID### is replaced with your full NetID)
(d) Upload both files to *https://utdallas.box.com/v/F16-HUAS6312-upload* before the deadline given in the class calendar.

PS: Please use the project proposal and slide templates available via http://goo.gl/tKQUAX. The proposal template contains useful hints.

Recommended Sources

This course does not use a textbook. Instead we harness a variety of mostly visual material taken from online sources.

General

- For basic city information, Wikipedia is not a crime!
- For site visits, we use
  Google Earth in 3D https://www.google.com/earth (ideally combined with a 3Dconnexion controller)
  Google Earth Timelapse https://earthengine.google.com/timelapse/
  Google Maps & **StreetView** https://www.google.com/maps
- For map layers, we use
  OpenStreetMap https://www.openstreetmap.org
  City-Data.com http://www.city-data.com/
  Walk Score https://www.walkscore.com/
  Sightsmap http://www.sightsmap.com/
  the Racial Dot Map https://demographics.virginia.edu/DotMap/index.html
  etc...

Science of Cities

- M. Barthelemy: **The Structure and Dynamics of Cities: Urban Data Analysis and Theoretical Modeling.** (Cambridge/UK: Cambridge University Press, 2017. [published on January 9, 2017!!!]
- M. Batty: **The New Science of Cities.** (Cambridge/MA: MIT-Press, 2013).
- M. Batty, K.W. Axhausen, F. Giannotti, A. Pdzdnoukov, 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
- **Science Special Issue: Cities** (8 February 2008).
  Video: http://www.sciencemag.org/site/feature/misc/webfeat/cities/video/

Urban Ecology (more narrow in meaning)

- R.T.T. Forman: **Urban Ecology. Science of Cities.** (Cambridge/UK: Cambridge Univerity Press, 2014).
- J. Niemelä: **Urban Ecology. Patterns, Processes, and Applications.** (Oxford: Oxford University Press, 2011).
- M. Alberti: **Advances in Urban Ecology. Integrating Humans and Ecological Processes in Urban Ecosystems.** (New York: Springer, 2008).

Classics

- R. Florida: **The Rise of the Creative Class** (New York: Basic Books, 2014²).
- L. Benevolo: **The History of the City.** (Cambridge/MA: MIT-Press, 1980). [still brilliant | author died Janury 5, 2017!]
- R. Venturi, S. Izenour, D. Scott-Brown: **Learning from Las Vegas.** (Cambridge/MA: MIT-Press, 1977).
- J. Jacobs: **The Death and Life of Great American Cities** (New York: Random House, 1961).

Instructor bio

Dr. Maximilian Schich is an associate professor in Arts & Technology at the University of Texas at Dallas and a founding member of the Edith O'Donnell Institute of Art History. He works to converge hermeneutics, information visualization, computer science, and physics to understand art, history, and culture. He is the first author of "A Network Framework of Cultural History" (Science Magazine, 2014) and a lead co-author of the animation "Charting Culture" (Nature video, 2014). Schich is also an editorial advisor at Leonardo Journal, an editorial board member at Palgrave Communications (NPG), Advances in Complex Systems (ACS), and the Journal for Digital Art History. He publishes in multiple disciplines and is a prolific speaker, translating his ideas to diverse audiences across academia and industry. His work received global press coverage in 28 languages. For more info see www.schich.info.

Recent publictions

1. Maximilian Schich: **Confusion.** *Edge.org* (31 Dec 2016)
   https://www.edge.org/response-detail/27209 *a brief comment (fresh from the frying pan)*
2. Maximilian Schich: **Figuring out Art History.** *arXiv:*1512.03301 (22 Oct 2015)
   http://arxiv.org/abs/1512.03301 *an invited perspective paper (Int. Journal for Digital Art History)*
3. Maximilian Schich, Chaoming Song, Yong-Yeol Ahn, Alexander Mirsky, Mauro Martino, Albert-László Barabási, Dirk Helbing:
   A Network Framework of Cultural History. *Science* 345,6196 (2014) 558-562.
   (free access via http://www.cultsci.net/) *a peer-reviewed research paper*
4. Maximilian Schich and Mauro Martino: **Charting Culture.** *Nature video* (31 Aug 2014)
   https://youtu.be/4gIhRkCcD4U *a computer animation*

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 submitted by the specified deadline (no exceptions!).
  The nature of an assignment including deliverables will be defined together, announced in class, or sent out as an email 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.
- Storage (regardless of the procedure): Maintain a ***digital library of examples*** (painting, sculpture, music, literature, computer art, interactive works, etc.) to be shared in class. Strictly adhere to academic and intellectual property procedures when quoting a work, or when presenting it as an example. Do not present the same work in two different classes.
- Please contact the instructor if you have a disability that requires some arrangements so that appropriate arrangments can be made.
- Participants must sign the attendance sheet at the begin of every session. Showing up late without excuse via email before class will be counted as non-attendance.
- The descriptions and timelines contained in this syllabus are *subject to change* at the discretion of the instructor.

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 will not be tolerated.
- Excessive unexcused non-attendance (see UTD syllabus policies for definition) will lower your grade.