

Mapping the data-driven city.

ARCH 3312 Special Topics

Meeting times: Tuesday/Thursday 10:10-12:55pm EST

Instructor: Diana Cristobal, dcristob@barnard.edu

Office Hours: By appointment



Forensic Architecture reconstruction of the “Black Friday” battle of August 1, during the Gaza War

Maps and data are shaping contemporary cities. Everything—from traffic, to consumer patterns, to social behaviors—is now subject to being recorded, analyzed, visualized, and even turned into algorithms that could calculate a future city. This information overload, coupled with quick advances in digital tools, has pushed the use of data for urban analysis under the guise of objectivity, efficiency, and universal applicability. But data mediated approaches for urban “improvement” are far from neutral, and its ambivalent effects have also contributed to what Virginia Eubanks has described as “automating inequality.” Learning how data and maps shape urban space is a crucial task today. This hybrid course aims to address the modes in which cities are represented, and the kinds of technologies through which cities are understood. Students will explore such questions through the making of composite digital models—that is, 4D urban models that embed maps, images, text, and videos—that reconstruct an urban research question.

CALENDAR: *** The schedule is subject to adjustment during the course of the semester. ***

READING SEMINARS:

W1: Counter-maps / Evidence
W2: Sensors / Smartness
W3: Satellites / Inhuman vision
W4: Cameras / Animation
W5: Urban games / Simulation
W6: Networks/ Interconnectivity

MAPPING PRESENTATIONS/TUTORIALS:

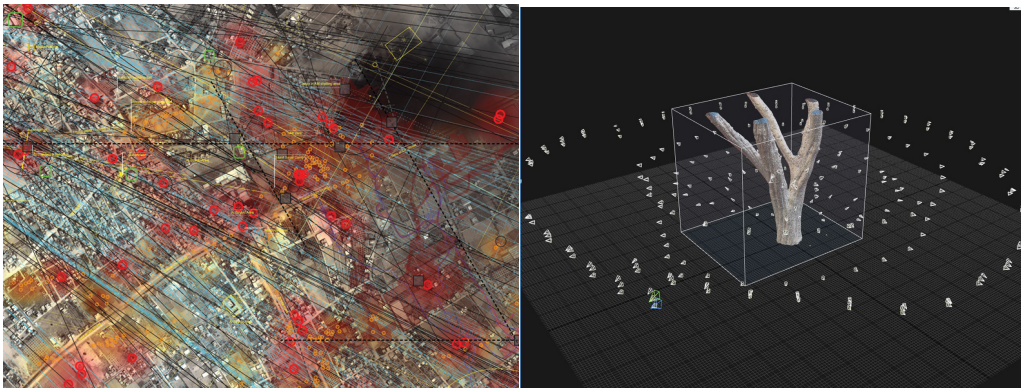
W1: Data gathering
W2: Layering (GIS)
W3: Modeling (Rhino)
W4: Animating 3D (Bongo)
W5: Animating 2D (Photoshop)
W6: Scanning (Agisoft)

Tu March 9.	SEMINAR	Counter-maps / Evidence
	PRESENTATION	Data gathering
Th March 11	WORKSHOP / DESKCRITS	
Tu March 16	SEMINAR	Sensors / Smartness
	PRESENTATION	Layering
Th March 18	WORKSHOP / DESKCRITS	
Tu March 23	SEMINAR	Satellites / Inhuman vision
	TUTORIAL	Modeling
Th March 25	WORKSHOP / DESKCRITS	
Tu March 30	SEMINAR	Cameras / Animation
	TUTORIAL	Animating 3D
Th April 1	PIN-UP EX01	
Tu April 6	SEMINAR	Urban games / Simulation
	TUTORIAL	Animating 2D
Th April 8	WORKSHOP / DESKCRITS	
Tu April 13	SEMINAR	Networks/ Interconnectivity
	TUTORIAL	Scanning
Th April 15	WORKSHOP / DESKCRITS	
Tu April 20	In class work	
Th April 22	Final review	

EXERCISES:

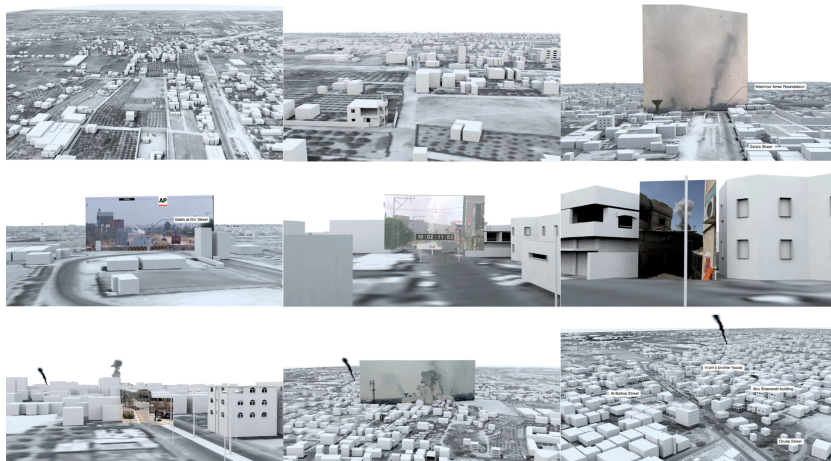
EX01: Composite map

Students will select one urban neighborhood, and will generate a digital archive that collects information around a specific research question. While compiling the material for the digital archive, students should question the notion of evidence—what should be considered as evidentiary documents in urban analysis? —and consider what kinds of data-sets are relevant—Qualitative? Quantitative? Spatial? social?. Students will incorporate their different findings into a digital “composite map”—that is, an image that is designed to combine different formats (3d model, image, text, statistical data) and different scales (from urban furniture to infrastructure systems). The resulting composite map should investigate the notion of evidence, inhuman vision, and network.



EX02: Animate the composite map

Students will create a video using their 3d model and composite images, that will explore their neighborhood’s conflict through time and space. In the process of making these dynamic cartographies we will move beyond the notion of efficacy of communication between the map and the mapped, and engage also with the affective and subjective aspects of cartography. Experimenting with mapmaking conventions students will borrow techniques from cinema and artistic practices, while also evaluating the legibility of such techniques for different audiences.



READINGS

W1: Counter-maps / Evidence

1. James Corner “The agency of mapping” in ed. Denis Cosgrove *Mappings* (London: Reaktion Books, 1999.) 6 p
2. Denis Wood “Talking back to the map” in *Rethinking the Power of Maps* (New York: The Guilford Press, 2010) 22 p
3. Read Laura Kurgan “Cities full of data: A preface” in *Ways of Knowing Cities* (Columbia books, 2019) (6 p)
4. VIDEO (5min) “Forensic Architecture: Where art meets activism - BBC Newsnight”
<https://www.youtube.com/watch?v=ehvtpGzF1r4>
5. VIDEO (1h) “Methods and Tools for Visual Investigations”
<https://forensic-architecture.org/programme/events/logancij16-methods-and-tools-for-visual-investigations>

W2: Sensors / Smartness

1. Orit Halpern “The Smartness Mandate” in *Grey Room*, n68 (Summer 2017): (13 p)
2. Shannon Mattern “A city is not a Computer” in *PacesJournal* (February 2017) (11 p)
3. Orit Halpern w/Gokce Gunel “Demoing unto Death: Smart Cities, Environment, and Preemptive Hope,” *FibreCulture* Issue 29, (2017): (14 p)

Further reading:

- Orit Halpern “Architecture as Machine: The Smart City Deconstructed” in *When is the Digital in Architecture?* (Montréal : Canadian Centre for Architecture; Berlin : Sternberg Press, 2017): 125-175
- Evangelos Kotsioris “Sensing Architecture” in *Perspecta* 51:227-243

W3: Satellites / Inhuman vision

1. Antoine Picon, *Mapping the Future of Cities* (3 p)
2. Laura Kurgan, *Close up at a Distance*: (+- 28 p)
3. Matthew Wilson, *OXAV* (3 p)
4. James Corner, *Taking Measures* (4 p)

Further reading:

- Michalis Pirokka et al, *Personal Remote Sensing*

W4: Cameras / Animation

1. Watch this panel discussion on “maps” for the publication *Ways of Knowing Cities* that GSAPP just published. Skip the introductions (begin min. 3:00) but watch the questions: (1 hour)
<https://www.youtube.com/watch?v=TSDbKnmwPB0>
2. Watch Eve Blau’s presentation on the exhibition “Urban Intermedia” that Harvard organized in 2018, and Laura Kurgan’s presentation on her work at the Center for Spatial Research. <https://www.youtube.com/watch?v=KyrDt3dptlw>
Watch these parts:

- a. min 14:30-26:00 (20min)
 - b. min 46:50- 1:00 (15min)
3. Watch Robert Pietrusko's presentation on the exhibition "Urban Intermedia." Watch from min 7:00-31min. <https://www.youtube.com/watch?v=4NIe7rIepwU> (25min)

W5: Games / Simulation

1. Valerie Frissen, Jos de Mul and Joost Raessens, "Homo Ludens 2.0: Play, Media and Identity" in *Contemporary Culture* (15 p)
2. R.L. Meier "Game Procedure in the Simulation of Cities" in *The Urban Condition* (8 p.)
3. J. Kim, "These board games play out how climate change will reshape our cities" in *Fastcompany*, <https://www.fastcompany.com/90323110/these-board-games-play-out-how-climate-change-will-reshape-our-cities> (2 p)
4. D. Popoff "The Cities Game," *Psychology Today* vol. 2 n3, (August 1968) (2 p)
5. A. G. Feldt "The Cornell Land Use Game," (Center for Housing and Environmental Studies, Cornell University, New York, 1964) (6 p)

Further Reading:

- Jean Baudrillard, "Simulacra and Simulations"
- R.D. Duke, "Gaming Simulation for Urban Planning" *Journal AIP*, vol 32, n1, (Jan 1969)

W6: Networks / Interconnectivity

1. Mark Wigley, "Network Fever" in *Grey Room* 04, (Summer 2001) (+-26 p)
2. Alexander Galloway "Networks are Real but Abstract" in *Protocol* (5 p):
3. Theodora Vardouli, "Yona Friedman, the Architecture Machine, and Design Participation" in *Graphing Theory: New Mathematics, Design, and the Participatory Turn* (Phd Thesis MIT, 2012) (10 p)

Further reading:

- Manuel Lima "Decoding Networks" in *Visual Complexity. Mapping Patterns of Information* (Princeton Architectural Press: New York, 2011)
- Larry Busbea, "Topological Polemics" in *Topologies. The Urban Utopia in France, 1960-1970* (Cambridge, Mass.: MIT Press, c2007.)
- Bruno Latour, "Spheres and Networks" In *Harvard Design Magazine*, (Spring/Summer 2009): 138-144

WEEKLY READING ASSIGNMENTS

Each Tuesday we will conduct a seminar discussion, for which assigned readings should be complete. Weekly reading responses are to be submitted by 5pm the afternoon before your seminar (Monday). Responses should be around 250 words. They should be guided by the thematic “word” of the week and comment on one or more of the required texts by highlighting a specific issue, passage, question, or feature of the argument.

Students will also select one seminar week, where they will make an individual reading presentation. Presentations should be short (± 15 min), and should be supported by 1 image, 1 question, and an argument summary of the author.

PREREQUISITES

All students must have completed an architectural design studio prior to taking this class. You should also be familiar with Rhino, and basic knowledge of illustrator and Photoshop is recommended.

STUDENT LEARNING OBJECTIVES

1. Formulate and conduct research related to technology, media, and architecture.
2. Demonstrate an understanding of selected issues related to technology, media, and architecture.
3. Develop an independent individual or collaborative project that examines a range of research sources including texts, images, film, websites and internet databases.
4. Utilize multimedia techniques to present a final project that incorporates research and a concise thesis on the class thematic.
5. Understand historical and theoretical texts for the curation of a research urban project
6. Demonstrate an understanding of theoretical texts through reading responses and thoughtful class participation.

COURSE REQUIREMENTS, EVALUATION, AND GRADING

Standard expectations for full attendance and completion of all assignments apply. Grades will be based upon a combination of the weekly reading responses, weekly Rhino exercises, midterm and final project presentations, participation both in seminars and workshop critiques, and a general commitment to engaging in debate and discussion about the subject matter. Thoughtful class participation is essential. If you are not comfortable with speaking in class, please come to see me and discuss other ways to contribute.

Grading will be as follows:

- . 10% Reading presentation
- . 30% Seminar participation & reading responses
- . 15% EX01 Network map
- . 15% EX02 Midterm project
- . 30% EX03 Final project

POLICIES AND STATEMENTS:

HONOR CODE

The Barnard Honor Code applies to all students in this class regardless of academic affiliation. Approved by the student body in 1912 and updated in 2016, the Code states:

We, the students of Barnard College, resolve to uphold the honor of the College by engaging with integrity in all of our academic pursuits. We affirm that academic integrity is the honorable creation and presentation of our own work. We acknowledge that it is our responsibility to seek clarification of proper forms of collaboration and use of academic resources in all assignments or exams. We consider academic integrity to include the proper use and care for all print, electronic, or other academic resources. We will respect the rights of others to engage in pursuit of learning in order to uphold our commitment to honor. We pledge to do all that is in our power to create a spirit of honesty and honor for its own sake.

The Columbia College Honor Code and the Columbia College Faculty Statement on Academic Integrity can be viewed here:

<https://www.college.columbia.edu/honorcode>

<https://www.college.columbia.edu/faculty/resourcesforinstructors/academicintegrity/statement>

CLASS ATTENDANCE, LATE ARRIVALS, AND ABSENCES POLICY:

Attendance is mandatory at all scheduled classes. Class is held Tuesday and Thursday beginning promptly at 4:10 PM. Any student arriving after 4:20 PM will be considered 'late' and arrivals after 5:00 PM will be considered as absent. Absences due to acute illness, a personal crisis (e.g. a death in the family), religious observance, or for other reasons of comparable gravity may be excused. In all such cases, students must promptly email their instructor to communicate the reason for their absence and to arrange an opportunity to review any important information they may have missed. Students who know they will miss scheduled classes due to religious holidays should meet with their instructor during the first week of classes to discuss their anticipated absences. Unexcused absences, late arrivals, or early departures from class will reduce your course grade. Three consecutive absences or four nonconsecutive absences will mean that you have dropped the course, whether or not you have filed the appropriate "drop" form. Three non-consecutive absences will result in a grade reduction by one-third of one letter grade (e.g., A- to B+). Three consecutive absences or four non-consecutive absences will adversely affect your final grade.

ACADEMIC ACCOMODATION STATEMENT

If you are a student with a documented disability and require academic accommodations in this course, you must register with the Office of Disability Services (ODS) for assistance. Students requesting accommodations will need to first meet with an ODS staff member. Once registered, students are required to request accommodation letters each semester to notify faculty.

Accommodations are not retroactive, so it is best to contact ODS early each semester to access your accommodations. If you are registered with ODS, please see me to schedule a meeting outside of class in which you can bring me your faculty notification letter and we can discuss your accommodations for this course. Students are not eligible to use their accommodations in this course until they have met with me. ODS is located in Milbank Hall, Room 009/008.

Columbia ODS is located in Wien Hall, Suite 108A.

AFFORDABLE ACCESS TO COURSE TEXTS STATEMENT:

All students deserve to be able to access course texts. The high costs of textbooks and other course materials prohibit access and perpetuate inequity, and Barnard librarians are partnering with students, faculty, and staff to increase access. By the first day of advance registration for each term, you should be able to view on Canvas information provided by your faculty about required texts (including ISBN or author, title, publisher and copyright date) and their prices. Once you have selected your classes, here are some cost-free methods for accessing course texts, recommended by the Barnard Library: find out if your faculty has placed the texts on reserve at Barnard Library or another Columbia library, and look for course texts using CLIO (library catalog), Borrow Direct (request books from partner libraries), Interlibrary Loan (request book chapters from any library), and NYPL. Students with financial need or insecurity can check items out from the FLIP lending libraries in the Barnard Library and Butler Library and can consult with the Dean of Studies and the Financial Aid Office about additional affordable alternatives for getting access to course texts. Talk with your librarian and visit the Barnard Library Textbook Affordability guide(library.barnard.edu/textbook-affordability) for more details.

WELLNESS STATEMENT

It is important for undergraduates to recognize and identify the different pressures, burdens, and stressors you may be facing, whether personal, emotional, physical, financial, mental, or academic. We as a community urge you to make yourself—your own health, sanity, and wellness—your priority throughout this term and your career here. Sleep, exercise, and eating well can all be a part of a healthy regimen to cope with stress. Resources exist to support you in several sectors of your life, and we encourage you to make use of them. Should you have any questions about navigating these resources, please visit these sites:

- Barnard Students: <https://barnard.edu/wellwoman/about>
- Columbia Students: <http://www.college.columbia.edu/resources> Click on Health-Wellness
- Columbia GS Students: <https://gs.columbia.edu/health-and-wellness>
- Columbia SEAS Students: <http://gradengineering.columbia.edu/campus-resources>

REFERENCE WEBSITES FOR MAPPING EXERCISES.

To download New York 3d Rhino models:

- Cadmapper: <https://cadmapper.com/>
- NYCDOIT: <https://www1.nyc.gov/site/doitt/initiatives/3d-building.page>

On New York Data Sets

- Museum of the City: data2go.nyc
- Zoning: <https://zola.planning.nyc.gov>
- Open Data: <https://opendata.cityofnewyork.us/projects/>
- Miscellaneous Data Sets: <https://www1.nyc.gov/site/doh/data/data-sets/data-sets-and-tables.page>

On Data Visualization Examples:

- <https://www.kiln.digital/>