COURSE SYLLABUS

# Mapping for Architecture, Urbanism, and the Humanities

Columbia University GSAPP | ARCH4122 | Spring 2020
Fridays 9:00–11:00am | 408 Avery Hall
Office hours: Fridays 11:00–1:00pm (with appointment)
Professor: Emily Fuhrman (ef2512)
Teaching Assistant: Tola Oniyangi (sio2106)

## Description

What role does cartography play in our relationship to space? How does technology make sense of places to which we have never been? Through what material practices is data produced, and how is it located? As a result, what cultural attitudes inhabit our maps, how do they (re)produce our environment, and how can they be contested?

This hybrid theory/practice course introduces critical mapping discourse and geographic information systems tools. Of particular interest to humanities students, it examines both historical and contemporary questions with reference to the technology of mapping. Additionally, through the use of open-source GIS software (QGIS), browser-based technologies (Mapbox), and open data (OpenStreetMap), students will learn how to critically use mapping tools and geographic data for spatial analysis and representation. Each class has two parts: in the first half of each meeting we will discuss weekly readings, while the second half serves as a flipped-classroom to address technical and conceptual issues arising from take-home GIS tutorials. The final weeks of the semester will be devoted to developing students' own critical cartographic research.

## Objectives

By the end of this course, students will be able to:

- Critically read a map
- Investigate the cultural attitudes and technologies behind cartographic practices
- Use QGIS to analyze and present geographic information
- Build location-aware dynamic maps for mobile devices
- Make intentional design decisions when creating maps

## Requirements and Grading

**10%** Attentive in-class participation and discussion of assigned reading and tutorials

**15%** Weekly written responses to assigned reading (200-400 words). These must be posted to canvas by noon the day before class. Responses will structure our in-class discussion and allow you to articulate your

questions for one another beforehand. You may engage not only the readings, but also each other. You may want to:

- Quote and comment on a particularly challenging passage
- Offer a critique of one or more of the texts
- Evaluate a cultural object from the perspective of the text
- Identify larger themes or contrasting viewpoints

**15%** Weekly mapping tutorials. These are graded by submission only. You may work alone, in pairs or groups of three. Please submit whatever you have completed via email by noon the day before class. You do not need to complete a tutorial to receive full credit, but you do need to have attempted it. If you do not have anything to send, please write a paragraph explaining how far you got and what problems you encountered. These will form the basis for the in-class tutorial.

**10%** A 10-minute presentation on your analysis/critique of a map or other cartographic practice. Address its context in terms of technology, intended audience, political orientation, and impact, and discuss the effectiveness of its representational and aesthetic choices. Provide some questions or provocations to kick off a short discussion with the class.

**50%** A research project. By week 8 you should be developing a question or thesis that you want to explore, analyze, or explain using some type of map, broadly defined. Projects can be produced for the web or other digital or physical media, and a white paper will discuss the decisions you made, the methods you used, and what you have learned from the outcome. Please note that late and/or partial credit are not given. Your grade is primarily the result of mindfully engaging in class and your work at the expected time.

## Community

This is a discussion-based course. All students and the instructor must be respectful of others in the classroom. If you ever feel that the classroom environment is discouraging your participation or is problematic in any way, please contact me.

## Accessibility

GSAPP is committed to full inclusion of all students. Please inform me if you have a disability or other condition that might require accommodations or modification of any of these course procedures. You may speak with me after class or during office hours.

## Schedule

### *1: 01/24 Introduction: Para-Empiricism*

Reading

- Kurgan, Laura. "Representation and the Necessity of Interpretation," in *Close Up at a Distance: Mapping, Technology, and Politics*. Zone Books, 2011.
- Borges, Jorge. "On Exactitude in Science."

QGIS Tutorial 1

- Getting Started with QGIS

## *2: 01/31 Constructing Space*

Reading

- de Certeau, Michel. "Walking in the City" in *The Practice of Everyday Life*. Univ. of California Press, 1984.
- Krauss, Rosalind. "Grids." *October* 9, 1979.

Additional Reading

- Schivelbusch, Wolfgang. "Railroad Space and Railroad Time" in The *Railway Journey: The Industrialization of Time and Space in the Nineteenth Century*. Univ. of California Press, 2014.
- Núñez, Rafael and Eve Sweetser. "With the Future Behind Them: Convergent Evidence From Aymara Language and Gesture in the Crosslinguistic Comparison of Spatial Construals of Time." *Cognitive Science* 30, 2006.

QGIS Tutorial 2

- Population Map

## *3: 02/07 Inscribing Space*

Reading

- Boelhower, William. "Inventing America: The Culture of the Map." *Revue française d'études américaines* 36, 1988.
- Harley, J.B. "Deconstructing the Map." *Cartographica* 26:2, 1989.
- Corner, James. "The Agency of Mapping" in *Mappings*, ed. Denis Cosgrove. Reaktion Books, 1999.

Additional Reading

- Siegert, Bernhard. "The Permanently Projected World" in *Cultural Techniques: Grids, Filters, Doors, and Other Articulations of the Real*. Fordham University Press, 2015.

QGIS Tutorial 3

- Data Types & Quantitative 311 Maps

## *4: 02/14 Spatial Visualizations*

Reading

- Meirelles, Isabel. "Spatial Structures: Maps" in *Design for Information: An Introduction to the Histories, Theories, and Best Practices Behind Effective Information Visualizations*. Rockport Publishers, 2013.
- Gregory, Ian. "A map is just a bad graph: Why spatial statistics are important in historical GIS" in *Placing History*. ESRI Press, 2008.

QGIS Tutorial 4

- Using the Census

## *5: 02/21 Counter-Mapping*

Reading

- Wood, Dennis. "Counter-Mapping and the Death of Cartography" and "The Outside Critique: Indigenous Mapping," in *Rethinking the Power of Maps*. Guilford Press, 2010.
- D'Ignazio, Catherine. "What would feminist data visualization look like?" Unpublished, 2015.
- Peluso, Nancy Lee. "Whose Woods Are These? Counter-Mapping Forest Territories in Kalimantan, Indonesia." *Antipode* 27:4, 1995.

Additional Reading

- Latour, Bruno. "The Domestication of the Savage Mind" in *Science in Action: How to Follow Scientists and Engineers Through Society*. Harvard University Press, 1987.
- Berger, Miriam. "When Waze Won't Help, Palestinians Make Their Own Maps." *Wired*. December 10, 2017.

QGIS Tutorial 5

- Vector Analysis Tools

## *6: 02/28 Data*

Reading

- Onouha, Mimi. "What is Missing is Still There." *Nichons-Nous Dans L'Internet*, 2018.
- Harris, Jacob. "Consider the Boolean." 2015.
- Pavlovska, Marianna. "Non-quantitative GIS" in *Qualitative GIS: A Mixed Methods Approach to Integrating Qualitative Research and Geographic Information Systems*, eds. Sarah Elwood and Meghan Cope. Sage Publications, 2009.

Additional Reading

- Gitelman, Lisa. "Raw Data" Is an Oxymoron. The MIT Press, 2013. (Introduction)

QGIS Tutorial 6

- Projections

## *7: 03/06 The View from Above*

Reading

- Parks, Lisa. "Plotting the Personal: Global Positioning Satellites and Interactive Media." *Cultural Geographies* 8, 2001.
- Farman, Jason. "Mapping the digital empire: Google Earth and the process of postmodern cartography." *New Media and Society* 12:6, 2010.
- Burrington, Ingrid. "Effortless Slippage." *e-flux*. May 25, 2018.

Additional Reading

- Pinto, John A. “Origins and Development of the Ichnographic City Plan.” *Journal of the Society of Architectural Historians* 35:1, 1976.
- Madrigal, Alexis. "How Google Builds Its Maps – and What It Means for the Future of Everything." *The Atlantic*, September 5, 2012.
- Fournier, Abelardo. "Seeding and Seeing: The inner colonisation of land and vision." *APRJA*, 2017.
- John Pickles, "The Cartographic Gaze, Global Visions and Modalities of Visual Culture" in *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World*. Routledge, 2004.
- Tayag, Yasmin. “Six NASA Astronauts Describe the Moment in Space when ‘Everything Changed.’” *Inverse*, March 27, 2018.

QGIS Tutorial 7
- Georeferencing

Final Project Brainstorm

## *8: 03/13 Computational Utopias*

Reading
- Marin, Louis. “Frontiers of Utopia: Past and Present.” *Critical Inquiry* 19:3, 1993.
- Stierli, Martino. “Building No Place.” *Journal of Architectural Education* 67:1, 2013.
- Edwards, Paul. "Control Earth." *Places Journal*, November 2016.

Additional Reading
- Bratton, Benjamin. "The Black Stack." *e-flux*, March 6, 2014.
- Gabrys, *Jennifer. Program Earth: Environmental Sensing Technology and the Making of a Computational Planet*. University of Pennsylvania Press, 2016.
- Picon, Antoine. “Learning from Utopia.” *Journal of Architectural Education* 67:1, 2013.

Webmapping Tutorial 1
- Getting Started with Mapbox

## *Spring Break*

## *9: 03/27 Locating Locative Media*

Reading
- Tuters, Mark and Kazys Varnelis. "Beyond Locative Media: Giving Shape to the Internet of Things." *Leonardo* 39:4, 2006.
- Morris, Dee and Stephen Voyce. "Embodied Mapping, Locative Mapping, and New Media Poetics." *Jacket 2*, March 20, 2015.

Additional Reading

- Fusco, Coco. "Questioning the Frame: Thoughts About Maps and Spatial Logic in the Global Present." *In These Times*, December 16, 2004.
- Shepard, Mark. *Sentient City*. MIT Press, 2011.

Webmapping Tutorial 2
- Live Data

*DUE: Research Project Proposals*

### *10: 04/03 Geospatial AI*

Reading
- Mattern, Shannon. "Mapping's Intelligent Agents." *Places Journal*, September 2017.
- Paglen, Trevor. "Invisible Images (Your Pictures Are Looking at You)". *New Inquiry*, December 8, 2016.
- Onuoha, Mimi. "On Algorithmic Violence." 2018.

Webmapping Tutorial 3
- Participatory Sensing

### *11: 04/10*

*Research Project: Preliminary Presentations*

### *12: 04/17*

*Research Project: Final Presentations*

### *13: 04/24*

*Research Project: Final Presentations*

### *14: 05/01 (No class)*

*DUE: Research Project Whitepaper*

## Online Resources

LivingMaps Review / Atlantic CityLab / PublicLab / The Library of Congress Maps Blog / Mapzen's Blog / NASA Earth Observatory / Stamen Design / Strange Maps / Fuck Yeah Cartography! / Making Maps: DIY Cartography / Maps Mania / Jacket2 / David Rumsey Map Collection / Territory Journal / Wired Map Lab /

Andy Woodruff's Blog / Shannon Mattern / Visualizing Data / FlowingData / Periscopic / Visualizing.org / Accurat / Eyeo Festival / Infosthetics / The Economist – Graphic Detail / The New York Times – The Upshot / Visualoop / FiveThirtyEight / Huffington Post / LA Times / Wall Street Journal / Washington Post / Quartz / The New York Times – Interactive Storytelling / Fathom / Moritz Stefaner / Nicholas Felton / Data Canvas / Waze Global Driver Satisfaction Index / Lapham's Quarterly Maps / Lapham's Quarterly Charts and Graphs / Quartz Atlas Charts / Sensory Maps / Library of Congress – Maps / The National Geologic Map Database / Old Maps Online / Data and Maps / Sidewalk Toronto Blog / (Many items on this list borrowed from Shannon Mattern and Juan Saldarriaga)