Urban Technology 230
Design and Urban Inquiries

4 Credits, Required

Version 1.0
Winter 2023
3100 A&AB
Mondays & Wednesdays, 1 - 4PM

Elisa Ngan (She/Her)
elisang@umich.edu
Office Hours: W 10-12 & by appointment

Changelog

Note:
The schedule of this syllabus is not final for the second module of this course to allow for flexibility. As we move through the course, the schedule may also change to align with the learning pace.

The date of the first presentation will not change. The date of the second presentation (final review) is currently pending upon program director review + review panel assembly. It will be announced later in the semester, upon which an email will be sent out.

Version History

Date	Description	Version
Jan 4th 2023, 1:00PM EST	Syllabus Frozen	1.0.0
Jan 5th 2023, 5:45PM EST	Reflections Added	1.1.0

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What is studio?

The Space

The studios are a core experience of the Urban Technology program. *Design and Urban Inquiries* is the first in this sequence. As a studio, you will be able to explore your urban technology interests within the framework of this class while learning how to navigate the design process through deeply iterative making. You are strongly encouraged to bring the skills and topics you've learned in your other classes and in the world to enhance your work in this studio.

Learning Goals

→ To practice navigating ambiguity within the design process by taking calculated risks.
→ To practice giving feedback constructively and incorporating feedback without losing personal design integrity.
→ To practice using intuition to produce self-guided work that explores personal and/or shared interests and goals.
→ To practice argumentation, persuasion, and leadership skills.

The strength of a studio and its capacity for learning is derived from the commitment of its cohort to excellence and to each other. It is in these conversations, both casual and formal, that you will find the personal and social values you aspire to bring forth into the world, filigreed, as they will be, into the things you produce and your discussions around them. My job is to ensure that this is a safe and productive intellectual space for you to pursue these explorations.

The Structure

Studio will be in person. Each session will proceed in the following pattern:

1) *Current Events*
   Students will share articles related to urban technology that they find interesting.
2) *Lecture*
   Instructor will introduce the design theory, cases, and methods relevant to the assignment.
3) *Feedback*
   a. *Desk Critiques (Desk Crits)*
      Moments where students meet with instructors to receive direct and targeted feedback. Students are expected to discuss their assignments with their instructors and deepen the production of their ideas. This may look like expressing doubts or concerns, asking questions about how to do something, and/or gauging design direction.
   b. *Pin-Up*
      Moments where students will pin up their work and give a short presentation to the group. The group and instructors will give feedback to presenters on both content and delivery. Students are expected to prepare appropriately.
   c. *Workshops*
      Moments where class will proceed through an exercise as a group.
   d. *Reviews*
      Final project presentations for a jury of invited experts.

	Temporal Scale	**Type**	**Application**	
Communication	Rapid	Ongoing Updates	Slack	
	Occasionally, Ad hoc	Announcements	Gmail	
	Periodically, Regular	Class Content	Canvas	
	Periodically, Regular	Assignment Submittals	Canvas	
	Type	**Modality**	**Tool**	**Notes**
Presentation	Desk Crit	Your Choice		
	Pin-Up	Digital Presentation	InDesign / Keynote	
		Physical Print	Plot	For in-person reviewers
		Digital Print	Miro	For in-person / outside reviewers
	Reviews	Digital Presentation	InDesign / Keynote	
		Physical Print	Plot	For in-person reviewers
		Digital Print	Miro	For in-person / outside reviewers
		Final Submittal	PDF, Video	
	Type	**Industry Standard**	**Alternatives**	**Notes**
Production	Mappings / Groupings	Paper & Post-Its	Miro	Miro is digitally easy, but physical embeds make your brainspace bigger.
Taubman has a great resource for tutorials here: https://sourcematerial.online/Taubman-Homebrew	Presentations	InDesign / Keynote		Google Slides not recommended (low resolution).
	Diagrams	Illustrator	Figma	You could, but there's less control.
	Photo Editing	Photoshop		Power vs. Simplicity
	Interfaces	Figma	Webflow, Code	
	Special Effects /	*for you to discover - have fun!*		

	Desires	

What's in an object?

The Role

We cannot talk about urban technology without talking about data. This studio will focus on developing the critical thinking skills needed to work with data as a material that weaves quality with quantity. Acting as an urban researcher, scientist, and hacker, you will un-make and re-make an urban object, developing both an explanatory story and a decision-support tool using methods from narrative design, information design, and content modeling.

The Un-Making

In the first half of this course, work will be done individually.

Through a series of tightly structured sedimentary exercises, you will select an urban object to understand deeply. The research will culminate in an anatomical unfolding of the object that synthesizes all the facets explored into a coherent visual story. You are expected to build up your ability to decompose problems and to unfold a whole into parts in order to anchor the messy, shifty world with intentional specificity. You will learn how to do this for both technical challenges (complex objects) and social challenges (multi-stakeholder environments).

Learning Goals

→ To develop a citizen hacking mindset by taking everyday things apart in order to understand them better.
→ To develop technical drawing skills for problem-solving and communication.
→ To introduce systems thinking by identifying components, finding connections, and pinpointing ambiguities, contradictions, and inconsistencies for novel yet grounded design research opportunities.
→ To practice documenting and tracking questions, hypotheses, and open opportunities for design.
→ To synthesize research into a persuasive and consumable format.

The Re-Making

In the second half of this course, work will be done in pre-assigned pairs.

Using the iconic double diamond as a preliminary guardrail framework, you will design a data visualization stepping through three levels of detail based on the stories generated during this class. The goal of the data visualization will be grounded in the research generated in the first half. You are expected to learn standard industry tools through peer learning and tutorials, whilst developing a capacity to find and develop additional personal resources that align and match with the creative goals of the project. As the creation of any piece of non-trivial technology will inevitably be a collaborative one, you are expected to explore the practice of collaboration with your partner in the safe space of this studio. This will include being mature and mindful of communication and time-keeping, both of which are critical in your ability to build anything of significance in the real world.

Learning Goals

→ To translate stories into data structures for creating visualizations.
→ To introduce standard design patterns and artifacts required for creating standard interfaces.

→ To introduce peer collaboration as a healthy didactic process of creativity.
→ To introduce and reflect on design thinking as a process of creation.
→ To introduce design visioning as a generator of resourcefulness.

Note that at the end of the second half, there will be a final review. See above section on studio for what this means.

Schedule

The Un-Making Narratives

Week 1

—

Wednesday, Jan 04

Lecture	Inquiries
Assigned	Un-Making Narratives
Assigned	Data Map
Workshop	What is design?
Assigned	Class Survey

Week 2 - Data Map Due

—

Monday, Jan 09

Due	Reflection #1
Workshop	Swarming Downtown Ann Arbor
Feedback	In-Class Office Hours

Wednesday, Jan 11

Due	Data Map
Warm-Up	Current Events
Lecture	Counts & Nouns
Assigned	Labeled Drawings

Week 3

—

Monday, Jan 16

No Class – Martin Luther King Day

Wednesday, Jan 18

Warm-Up	Current Events
Workshop	Question Generation
Desk Crit	Data Map & Labeled Drawings

Week 4

—

Monday, Jan 23

Warm-Up	Current Events
Lecture	SpaceTimes
Assigned	Material Unfolding
Desk Crit	Labeled Drawings & Material Unfolding

Wednesday, Jan 25

Warm-Up	Current Events
Pin-Up	Labeled Drawings & Material Unfolding

Week 5 - Labeled Drawings & Material Unfolding Due

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Monday, Jan 30

Due	Labeled Drawings & Material Unfolding
Warm-Up	Current Events
Lecture	Verbs
Assigned	Touchpoints Analysis
Desk Crit	Labeled Drawings & Touchpoint Analysis

Wednesday, Feb 01

Warm-Up	Current Events
Lecture	Adjectives
Assigned	Taxonomical Classification
Desk Crit	Touchpoint Analysis & Taxonomical Classification

Week 6

—

Monday, Feb 06

Due	Reflection #2
Warm-Up	Current Events
Pin-Up	Touchpoint Analysis & Taxonomical Classification

Wednesday, Feb 08

Warm-Up	Current Events
Desk Crit	Touchpoint Analysis & Taxonomical Classification

Week 7 - Touchpoint Analysis & Taxonomical Classification Due

—

Monday, Feb 13

Due	Touchpoints Analysis & Taxonomical Classification
Warm-Up	Current Events
Lecture	Stories
Assigned	Historical Timelines
Workshop	Question Generation

Wednesday, Feb 15

Warm-Up	Current Events
Lecture	Models
Assigned	Narrative Sketch
Desk Crit	Narratives & Historical Timelines

Week 8 - Historical Timeline, Anatomical Intelligence, and All Un-Making Assignment Re-submittal

—

Monday, Feb 20

Due	Historical Timelines
Warm-Up	Current Events
Desk Crit	Narratives

Wednesday, Feb 22

Due	Anatomical Intelligence and All Un-Making Narratives Assignments
Review	Un-Making Narratives
Assigned	Class Survey

Week 9 - Spring Break

—

Monday, Feb 27

No Class – Spring Break

Wednesday, Mar 01

No Class – Spring Break

The Re-Making Data Visualizations

Week 10

—

Monday, Mar 06

Warm-Up	Current Events
Lecture	Methods
Assigned	Partner & Topics
Assigned	Teaming Worksheet
Assigned	Data Visualization Project
Assigned	Narrative Prototype

Wednesday, Mar 08

Due	Reflection #3
Warm-Up	Current Events
Desk Crit	Data Visualization Project

Week 11 - Narrative Prototype Due

—

Monday, Mar 13

Due	Narrative Prototype
Warm-Up	Current Events
Lecture	Information
Assigned	Object Prototype
Workshop	Decomposition 2.0

Wednesday, Mar 15

Warm-Up	Current Events
Desk Crit	Data Visualization Project

Week 12 - Data Prototype Due

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Monday, Mar 20

Due	Database Prototype
Warm-Up	Current Events
Lecture	Interfaces
Assigned	Database Prototype
Desk Crit	Data Visualization Project

Wednesday, Mar 22

Warm-Up	Current Events
Desk Crit	Data Visualization Project

Week 13 - Object Prototype Due

—

Monday, Mar 27

Due	Object Prototype

Warm-Up	Current Events
Lecture	Information
Desk Crit	Data Visualization Project

Wednesday, Mar 29

Pin-Up	Data Visualization Project

Week 14 - Glyph Prototype Due

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Monday, Apr 03

Due	Reflection #4
Due	Glyph Prototype
Warm-Up	Current Events
Desk Crit	Data Visualization Project

Wednesday, Apr 05

Warm-Up	Current Events
Lecture	Critical Thinking in Data (Science)
Guest	Mike Smith (Tentative)
Desk Crit	Data Visualization Project

Week 15 - Interface Prototype Due

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Monday, Apr 10

Due	Interface Prototype
Desk Crit	Data Visualization Project

Wednesday, Apr 12

Desk Crit	Data Visualization Project

Week 16 - Decision Support Tool and All Re-Making Assignment Resubmittal

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Monday, Apr 17

Due	Decision Support Tool and All Re-Making Data Visualization Project Deliverables
Final Review	Re-Making Data Visualization

Evaluation

The experience of this studio is centered around the production of your assignments. However, the deliverable is not all there is to the assignment. Like you will find in the real world, there is a whole host of communication with various stakeholders that must proceed before the actual production of any urban technology. The success of your career will hinge on your ability to solicit constructive feedback, from me and from your peers, and not make things in a personal vacuum. Therefore, the grading will reflect this scenario and assignments will be evaluated in context of the studio interactions: its desk crits, pin-ups, and presentations. You are expected to design the conversation you need to efficiently and effectively move forward your projects to its best possible outcome. Use the time in class wisely.

Definition of an "Assignment"

Assignment
Desk Crits
Pin-Ups
Presentations
Artifact
Reflections

Grading Breakdown (Macro – Class Level)

The table below addresses how each of your assignments lead to a cumulative grade.

Assignment	Total %	
The Un-Making Narratives		45%
Data Map	5%	
Labeled Drawings	5%	
Material Unfolding	5%	
Touchpoint Analysis	5%	
Taxonomical Classification	5%	
Historical Timelines	5%	
Anatomical Intelligence	15%	
The Re-Making Data Visualizations		50%
Narrative Prototype	5%	
Data Prototype	5%	
Object Prototype	5%	
Glyph Prototype	5%	
Interface Prototype	5%	
Decision Support Tool	25%	
Warm-Up Participation (3)		5%
Class Total		100%

Grading Breakdown (Micro – Assignment Level)

The table below addresses how the learning outcomes of the urban technology program are built into each of your assignments. Each of your assignments will be graded according to the following qualities, with the corresponding context of its evaluation. These roll up into your final grade for the un-making and re-making sections.

Studio		
1	Creativity	20%
	A diversity of knowledge sources	Assignment Submittal
	An original contribution to the desired discourse	Desk Crit / Pin-up / Presentation
	A rigorous approach to a topic with a demonstrated willingness to fail	Desk Crit / Pin-up / Presentation
	An openness and humility to the subject under investigation	Desk Crit / Pin-up
2	Leadership	20%
	A thoughtful attention to evidence and contradictions	Desk Crit / Pin-up / Presentation
	A self-awareness in regards to interactions	Desk Crit / Pin-up / Presentation
	An ability to influence and develop a shared perspective with class and project partner	Desk Crit / Pin-up / Presentation
3	Design Process	20%
	A desire to learn, take, and receive feedback within a shared framework	Desk Crit / Pin-up
	A strong compass of articulated personal values	Desk Crit / Pin-up
	A facility and strategic orientation towards ambiguity as a material	Desk Crit
	A strong ability to navigate qualitative information	Desk Crit
4	Technical Communication	20%
	An attention to proportion as a guide to attention	Assignment
	An attention to space as a guide to order	Assignment
	An attention to linework and density as a guide to relevance	Assignment
	An attention to organization as a guide to clarity	Assignment
	An attention to tracking open questions for a group	Desk Crit / Pin-up
5	Design Ability	20%
	Able to translate stories into data structures	Assignment
	Able to find data for data structures and iterate on the prototype as needed	Assignment
	Able to develop questions for existing data	Assignment
	Able to identify research opportunities for new datasets	Assignment
	Able to develop standard interfaces for existing data	Assignment

	Able to develop novel interfaces	Assignment

Regrades

As an instructor, I have no desire to give you a low grade, but I do have a desire to give you feedback that is an honest assessment of where you need to improve. This means that:

- → I will grade each of your assignments when they are due so you know where you are and where you need to improve on desk crits, pin-ups, deliverables.
- → I will do a collective re-grade of your deliverables at the end of the un-making and re-making sections. This will give you a chance to improve each of the deliverables based on the feedback given in preparation for both the review and the submittal. The strength of the final deliverables will represent your attention to improving desk crit and pin-up strategies.

Remember: never be afraid of asking a question, but also try to be clear on what you're trying to learn from it and whether this is the appropriate person to ask. Use your judgment and actively seek to develop it. This is, after all, an Inquiries studio.

Policies

Academic Integrity

You are expected to be familiar with and abide by the policies of Taubman College and the University of Michigan, on such matters as academic integrity, conduct, and use of the building and other resources: http://taubmancollege.umich.edu/students/academic_policies/general/. Taubman College Academic and Professional Student Conduct Policies apply to all Taubman College students as well as non-Taubman College students who take courses within the college. Wherever a course syllabus shows a discrepancy between listed policies or resource links and official university postings elsewhere, the higher and more central postings have priority. In particular, you are expected to be familiar with university policies against plagiarism.

Diversity

Taubman College affirms the principles of diversity, equity, and inclusion as we organize resources and priorities that align with our values. We seek to have a diverse group of persons at all levels of the college - students, faculty, staff and administrators - including persons of different race and ethnicity, national origin, gender and gender expression, socioeconomic status, sexual orientation, religious commitment, age, and disability status. We strive to create a community of mutual respect and trust, a community in which all persons and their respective backgrounds, identities, and views are allowed to be made visible and communicated without the threat of bias, harassment, intimidation, or discrimination.

Disability

If you think you need accommodations for a disability, please inform the instructor. Some aspects of this course – including assignments, and in-class activities – may be modified to facilitate your participation and progress. We will work with Services for Students with Disabilities to determine appropriate academic accommodations. We will treat any information you provide as private and confidential.

Mental Wellness

Taubman College of Architecture and Urban Planning is committed to advancing the mental health and well-being of its students. Studies and surveys indicate clearly that a variety of issues, such as strained relationships, increased anxiety, alcohol/drug problems, and depression, directly impact students' academic performance. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, please reach out to any of the following for assistance:

- Karen Henry is our very own counseling psychologist and therapist. She is affiliated with CAPS but works exclusively with art, design, urban planning and architecture students. Her office is located in our building (A&A) and she can be reached by email for appointment scheduling (karhenry@umich.edu).
- Counseling and Psychological Services (CAPS) can be reached at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays.
- You may also consult University Health Service (UHS) at (734) 764-8320 and https://www.uhs.umich.edu/mentalhealthsvcs, or for alcohol or drug concerns, see www.uhs.umich.edu/aodresources.For an extensive listing of mental health resources available on and off campus, visit: http://umich.edu/~mhealth/.
- Getting help right away - If you or someone you know is in a crisis situation and need help immediately please call 911 or else call (734) 996-4747 (U-M Psychiatric Emergency)