ARCH 1002
Introduction to Architecture 2

Dalhousie School of Architecture
Winter 2024 Monday, 2:30–5:30, B015
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School of Architecture Office
TAs:
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Calendar Description. This course introduces how design shapes our natural, physical, and virtual environments. Students learn about designing at different scales, from nanometers to kilometers. Through an interdisciplinary lens, it considers how designers work with artists, scientists, and humanists to address complex problems such as social justice, climate change, and technological transformation.

Learning Objectives

At the end of the course, students will be able to:

1. Use tools of visual communication;

2. Understand how these tools translate across two, three, and four dimensions;

3. Use "form, color, materials, language, and systems thinking" (Lupton 2017) to tell stories;

4. Engage mentally, verbally, and in writing with concepts of creativity, design and architecture.

Class Format. lectures, workshops, seminars, tutorials, reviews, site visits

Weekly Hours. For this 3-credit-hour course, an average of 9 hours per week is expected for all course-related activities, including classes. If you are spending substantially more time, please notify the instructor.

Schedule

Stage	Wk	Date	Course Lecture		Assignment Lect.		In-Class	Due
A. Communicating Visually	**1**	**Jan 8**	1	Introduction: Architecture and Design	A	Assignment 1 Introduction	Working with the Rule of Thirds	
	2	**Jan 15**	2	Guest: BEDS Program Introduction	B	Tone and Colour	Tone and Colour	
	3	**Jan 22**	3	History of Architecture and Design	C	Gestalt Principles	Gestalt Principles	
	4	**Jan 29**		None		None	**Presentation**	**A1**
B. Visualizing the Invisible	**5**	**Feb 5**	4	How to measure what you can't see	D	Assignment 2 Introduction	Data Visualization	**A5.1**
	6	**Feb 12**		Guest		Project Feedback		
	7	**Feb 19**		*Winter Break (No Class)*				
	8	**Feb 26**	5	Experiences In Architecture and Design		Project Feedback (No Lecture)	Tour of H-Building, Idea Shops, & Design Building	
	9	**Mar 4**		None		None	**Presentation**	**A2**
C. Visual Instructions for Materials and Systems, or Games	**10**	**Mar 11**	6	Visual Instructions for Materials and Systems, or Games	E	Assignment 3 Introduction	Materials and Systems	**A5.2**
	11	**Mar 18**	7	Architecture and Design Today and Tomorrow	F	Making Things	Project Feedback	
	12	**Mar 25**		Guest		SLEQ & Project Feedback		
	13	**Apr 1**		None		None	**Presentation**	**A3, A5.2***

Lecture dates and topics subject to change.
Week 5, last week to withdraw without a W. Check university calendar dates.
Week 9, last week to withdraw. Check university calendar dates.
Student Learning Experience Questionnaires (SLEQ) will be scheduled during class time in the last two weeks.
*A5.2 due Apr 8

Required References

Required readings will be uploaded to Brightspace. The following references are available through the library. Highlighted text links to online text.

Ching, Francis. *Design Drawing*

Ching, Francis. *Form, Space, and Order*

Lupton, Ellen. *Design is Storytelling*

Optional References

Print/Digital Publications

Brand, Stewart. *How Buildings Learn: What Happens After They're Built*

Braxton, Anthony. *Forces In Motion*

Dabner, David. *Graphic Design School: The Principles and Practice of Graphic Design*

Else, Perry. *Making Sense of Play: Supporting Children in their Play*

Franklin, Samuel W. *The Cult of Creativity: A Surprisingly Recent History*

Halprin, Lawrence. *RSVP Cycles*

Ingold, Tim. *Making: Anthropology, Archaeology, Art and Architecture*

Maeda, John. *Maeda at Media*

McLuhan, Marshall. *Understanding Media*

Negroponte, Nicholas. *The Architecture Machine*

Pye, David. *The Nature and Art of Workmanship*

Thompson, Rob. *Prototyping and Low-Volume Production*

Tufte, Edward. *Envisioning Information*

Tufte, Edward. *Quantitative Display of Visual Information*

Rendgen, Sandra. *Information Graphics*

Resnick, Mitchel. *Lifelong Kindergarten*

Simitch, Andrea and Val Warke. *The Language of Architecture: 26 Principles Every Architect Should Know*

Wizinsky, Matthew. *Design after Capitalism: Transforming Design Today for an Equitable Tomorrow*

Online Resources

Ellen Lupton (https://ellenlupton.com/)

New York Times Graphics (https://www.nytimes.com/spotlight/graphics)

Sarah Rendgen (https://sandrarendgen.wordpress.com/)

Design Across Scales Lab (https://labs.aap.cornell.edu/daslab)

Design After Capitalism (https://designaftercapitalism.org/)

Self-Assembly Lab (https://selfassemblylab.mit.edu/)

Edward Tufte (https://www.edwardtufte.com/tufte/)

Required Equipment and Materials
Drawing
Pencil, sketchbook, eraser. Sketchbook must be unlined (ie, not a ruled notebook)

Making
Scissors, glue, tape, miscellaneous materials

Software
Business suite apps (ie Microsoft Word, Excel, PowerPoint
(https://software.library.dal.ca/index.php/index.php/); Google docs, sheets, slides)

Optional Equipment and Materials
Drawing
Roll of trace paper, colored pencils, markers

Cutting
X-acto knife, Olfa Knife, metal straight edge / ruler, cutting mat

Measuring
Tape measure, metal ruler, scale

Materials
paper, card, rope, twine, fabric, lego, clay, wood, tape

Drafting and 3d Prototyping software
Autodesk Autocad, Inventor and others Educational Version
(https://www.autodesk.com/education/edu-software/overview?sorting=featured&filters=individual)

Rhinoceros 3d (90-day evaluation license: https://www.rhino3d.com/download/)

Blender

Geographic Information System (GIS) Mapping software
ArchGIS Available at Dalhousie Learning Commons

(https://libraries.dal.ca/hours-locations/workspaces/learning-commons.html)

Dalhousie GIS Centre (https://libraries.dal.ca/hours-locations/gis-centre.html)

Dalhousie GIS Technology

(https://libraries.dal.ca/hours-locations/gis-centre/gis-technology.html)

Large format Printing
Available at Dalhousie Copying & Printing

(https://libraries.dal.ca/services/photocopying-printing.html#largeformatprinting)

Scanning

Available at Dalhousie Learning Commons

(https://libraries.dal.ca/hours-locations/workspaces/learning-commons.html)

Graphic software
Adobe Photoshop (photo editor) / Illustrator (vector graphics) / InDesign (desktop publishing)

Affinity Photo (photo editor) / Designer (vector graphics) / Publisher (desktop publishing)

Pixlr (free photo editor)

Inkscape (free vector graphics)

Scribus (open source desktop publishing)

Scripting software
Grasshopper for Rhino (https://www.rhino3d.com/6/new/grasshopper/)

Coding
Processing (https://processing.org/) software sketchbook and language for learning how to code

3d Printing
Available at Dalhousie Libraries

(https://libraries.dal.ca/services/photocopying-printing/3d-printing.html)

3d Scanning
Available at Killam Library

(https://blogs.dal.ca/libraries/2012/07/3d-scanning-at-the-killam-library/)

Additional Tutoring or Academic Support
Online Software Tutorials
Making a Power Point Presentation

(https://support.microsoft.com/en-us/office/create-a-presentation-in-powerpoint-422250f8-5721-4cea-92cc-202fa7b89617)

School of Architecture Design Software
(https://www.dal.ca/faculty/architecture-planning/current-students/inside-building/design-software-tutorials.html)

Grasshopper for Rhino Primer (http://grasshopperprimer.com/en/index.html)

Lifewire (https://www.lifewire.com/computers-laptops-and-tablets-4781146) General computer tutorials

Online Making Tutorials
Instructables (https://www.instructables.com/) Maker community site

Materiom (https://materiom.org/search) Recipes for bio-based materials

Makezine (https://makezine.com/) Maker community site

Hackaday (https://hackaday.com/) Daily technical hacks

Kiwico (https://www.kiwico.com/diy) Low-tech prototyping

Wikifactory (https://wikifactory.com/) Crowd-sourced prototyping

ASSESSMENT

Components and Evaluation

	Assignment	Weight	Type	Authorship	Evaluated by
1	Communicating Visually	25%	Letter	individual	instructor / assistants
2	Visualizing the Invisible	30%	Letter	individual	instructor / assistants
3	Visual Instructions for Materials and Systems, or Games	30%	Letter	group	instructor / assistants
4.1	In-class exercise 1	2.5%	Pass/Fail	individual	assistants
4.2	In-class exercise 2	2.5%	Pass/Fail	individual	assistants
4.3	In-class exercise 3	2.5%	Pass/Fail	individual	assistants
5.1	Reading Response 1	2.5%	Pass/Fail	individual	assistants
5.2	Reading Response 2	2.5%	Pass/Fail	individual	assistants
5.3	Reading Response 3	2.5%	Pass/Fail	individual	assistants

Attendance or Participation Requirements
Attendance is required for in-class exercises. Incomplete in-class exercises without a Student Declaration of Absence will receive a grade of zero.

Components that are Required but not Assessed
Attendance at lectures, seminars, and working sessions are mandatory.

Guidelines for Citing Sources
Chicago Manual of Style: Author-Date Style. For details, see:

Chicago quick guide: http://tinyurl.com/chicago-quick-guide

Chicago Manual full guide: http://tinyurl.com/chicago-full

Format for Assignments

See assignment description.

Submission of Assignments
See assignment description.

Criteria and Standards for Assessment
See assignment description.

Group Assignments
Students in a group will receive the same grade for a group assignment. Review the provided Group Work Worksheet. This provides useful guidelines for working together.

University Standards for Assignments

Letter	Percent	Definition	Description
A+	90–100%	Excellent	Considerable evidence of original thinking; outstanding capacity to analyze and synthesize; outstanding grasp of subject matter; evidence of extensive knowledge base.
A	85–89%		
A–	80–84%		
B+	77–79%	Good	Evidence of grasp of subject matter, some evidence of critical capacity and analytical ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.
B	73–76%		
B–	70–72%		
C+	65–69%	Satisfactory	Evidence of some understanding of the subject matter; ability to develop solutions to simple problems.
C	60–64%		
C–	55–59%		
D	50–54%	Marginal pass	Evidence of minimal familiarity with the subject matter; minimal analytical and critical skill.
F	0–49%	Fail	Little evidence of understanding of the subject matter; weakness in analytical and critical skills; limited or irrelevant use of the literature.
INC		Incomplete	(counts as zero in GPA calculation)
W		Withdrew after deadline	(neutral in GPA calculation)
ILL		Compassionate reasons, illness	(neutral in GPA calculation)

Calculation of Final Grades

Letter grades for assignments will be converted to their mid-point percentage, multiplied by their weight, added, then converted to a final letter grade.

Grading Format

Assignment evaluations will be issued to students as grades, written comments, and/or oral comments.

Students will receive verbal feedback on Assignment 1 before the last day to drop a course without receiving a W.

	Due date	Is a late assignment accepted?	If so, what is the deduction per weekday?	Is there a final deadline for a late submission?	What happens after that?
Assign. 1	Jan. 29	yes	3%	April 8	receives 0%
Assign. 2	Mar. 4	yes	3%	April 8	receives 0%
Assign. 3	Apr. 1	yes	3%	April 8	receives 0%
Assign. 4.1	TBA	no	n/a	n/a	receives 0%
Assign. 4.2	TBA	no	n/a	n/a	receives 0%
Assign. 4.3	TBA	no	n/a	n/a	receives 0%
Assign. 5.1	Feb. 5	no	n/a	n/a	receives 0%
Assign. 5.2	Mar. 11	no	n/a	n/a	receives 0%
Assign. 5.3	Apr. 8	no	n/a	n/a	receives 0%

Note: The following University or School policies take precedence over course-specific policies:

- No late assignments are accepted after the last day of weekly classes.
- With a Student Declaration of Absence (maximum two per course), an assignment may be submitted up to three weekdays late without penalty.
- With a medical note submitted to the Instructor, a course assignment may be submitted more than three weekdays late without penalty. The number of weekdays depends on how long you were unable to work, as indicated in the medical note.
- A student with an accessibility plan that allows for deadline extensions does not need to submit an SDA.
- SDA's and accessibility accommodations for group assignments will be addressed on a case-by-case basis.

Academic Integrity
All work must be your own. It is a violation of University Academic Integrity Policy to knowingly copy another person's work. The University Academic Integrity Policy is here: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Lecture Notes or Recordings
Students may record lectures. Lecture and video tutorials will be made available to students.

FACULTY POLICY

Equity, Diversity and Inclusion

The Faculty of Architecture and Planning is committed to recognizing and addressing racism, sexism, xenophobia and other forms of oppression within academia and the professions of architecture and planning. We, the faculty, are working to address issues of historic normalization of oppressive politics, segregation, and community disempowerment, which continues within our disciplines today.

UNIVERSITY POLICIES AND RESOURCES

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate. For university regulations, go to https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=82&chapterid=4741&loaduseredits=False.

A. University Statements

Academic Integrity

http://www.dal.ca/dept/university_secretariat/academic-integrity.html

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. Read more: https://www.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/Syllabus_Statement_(Aug%202015).pdf

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of: a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (NS, NB, PEI, NFLD). Read more: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. Read more:

https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/student-life-policies/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). Read more: http://www.dal.ca/cultureofrespect.html

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit the office in the McCain Building (room 3037) or contact the programs at elders@dal.ca or 902-494-6803 (leave a message).

B. University Policies and Programs

- Important Dates in the Academic Year (including add/drop dates): http://www.dal.ca/academics/important_dates.html

- University Grading Practices: Statement of Principles and Procedures: https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

- Scent-Free Program: http://www.dal.ca/dept/safety/programs-services/occupationalsafety/scent-free.html

- Student Declaration of Absence: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/academic-policies/student-absence.html

C. Learning and Support Resources

- General Academic Support – Advising: https://www.dal.ca/campus_life/academic-support/advising.html

- Fair Dealing Guidelines: https://libraries.dal.ca/services/copyright-office/guidelines/fair-dealingguidelines.html

- Dalhousie University Library: http://libraries.dal.ca

- Indigenous Students: https://www.dal.ca/campus_life/communities/indigenous.html

- Black Students: https://www.dal.ca/campus_life/communities/black-student-advising.html

- International Students: https://www.dal.ca/campus_life/international-centre.html

- Student Health Services: https://www.dal.ca/campus_life/health-and-wellness.html

- Counselling: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

- Copyright Office: https://libraries.dal.ca/services/copyright-office.html

- E-Learning website: http://www.dal.ca/dept/elearning.html

- Dalhousie Student Advocacy Services: http://dsu.ca/dsas

- Dalhousie Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

- Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

- Faculty or Departmental Advising Support: Studying for Success Program: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

D. Safety

- Biosafety: http://www.dal.ca/dept/safety/programs-services/biosafety.html
- Research Laboratory Safety Policy Manual: http://www.dal.ca/dept/safety/documents-policiesprocedures.html
- Faculty of Architecture and Planning: Work Safety: https://www.dal.ca/faculty/architecture-planning/current-students/inside-building/work-safety.html

Assignments

Assignment 1. Communicating Visually

This assignment will help you develop abilities in visual composition. Architects and designers use visual composition to direct our gaze and guide our actions.

At the end of this assignments you will be able to:

- Direct a viewer's attention through cropping and visual focus, balance, harmony.
- Understand how to control tonal range of colors and materials to support their composition.
- Create visual groupings.

These elements are required to create a clear visual composition to direct the gaze and create a visual journey.

Through three (3) weekly assignments you will make three compositions using three (3) different

types of media (1. photography, 2. collage, and 3. model) using three (3) different visual techniques (1. cropping, 2. tone and colour, and 3. gestalt principles).

Work will be done in-class and at-home. You will submit your work each week for evaluation and grading at the end of three weeks. Some submissions will be selected each week to be shared and discussed in-class so you can learn from what's been submitted.

Submission Instructions
See instructions on Brightspace.

Week 1 (Jan 8 - Jan 15). Cropping.
Sub-assignment 1.10
1.   In-Class: Turn on your camera phone's grid (If you do not have a camera phone please notify your instructor). Select a scene and take several photos of it, trying out different compositions using the rule of thirds. In a group of two to five students, review your photos and select the one that best uses the rule of thirds to achieve visual balance and harmony. Upload this image to Brightspace.

Sub-assignment 1.11
1.   At-Home: Find a photo that has at least three elements (objects (i.e. people, fruit, houses), surfaces (i.e. wall, floor, table, tablecloth, sky), colors, shapes) in it. (If you find it digitally, print it out). Using a sheet(s) of paper to block out parts of the image, practice cropping the image to create emphasis on certain areas according to the rule of thirds. Make at least five cropped views, photographing each. Upload your photos to Brightspace.

Some things you can explore in-class and/or at-home:

- Zooming out to include a lot of information
- Zooming in to crop out a lot of information
- Isolating a single element

- Creating a pattern of elements
- Creating an ambiguous set of shapes with no clear foreground or background

Week 2 (Jan 15 - Jan 22). Tone and Colour

Sub-assignment 1.20

1. In-Class: Using your pencil, create a value range scale of 5 steps in your sketchbook. Once you have 5 distinct values (check with your neighbour), create a series of compositions using 3 to 4 tonal ranges. Use the 9-square grid as a basis for your composition. Experiment with light, dark, and medium tones as well as large and small areas of shading. See how your eye moves differently around each composition. Ask your neighbour if their eyes move in the same pattern. See if you can plan out ahead of time where you want someone to focus and if you can create a composition that achieves that (as your neighbour). Photograph and upload your tonal exercises and at least two compositions.

Sub-assignment 1.21

1. At-Home: Using a 9-square grid as a basis create an abstract composition that creates visual movement, balance, and/or harmony. You can use pages from a magazine or newspaper, coloured paper, charcoal, water colour, coloured pencil, pencil. When using colour or found materials, maintain the sense of value range developed in your in-class exercise. You can take a black and white photo of your composition to test this.

2. Provide a short (2 to 3 sentence) description of how you organized your composition to achieve movement, balance, and/or harmony. Upload photos of your composition and process sketches to Brightspace.

Week 3 (Jan 22 - Jan 29). Gestalt Principles

Sub-assignment 1.30

1. In-Class: In your sketchbook, practice making larger groupings from smaller shapes. For instance, this can be patterns of the same shape that organize into separate groups (proximity), or create one large group (similarity). It can be the same shape that changes incrementally (common fate), or different shapes that fit together into a whole (continuation, symmetry, or closure). Or a pattern that creates figure/ground ambiguity. You may wish to use your 9-square grid as a way to help you organize your composition. Test with your neighbour if they see the larger groupings and visual effects you are trying to make.

2. Time-permitting, try to explore an element of difference in your composition by including or substituting a different shape, or heavier or lighter tone. Upload photos of all your sketches to Brightspace.

Sub-assignment 1.31

3. At-Home: Using found materials and / or made objects make a 2.5-D or 3-D gestalt composition. Use the 9-square grid as a basis for this composition, thinking about how this can help you organize visual balance and harmony. Also consider tonal ranges in the materials you use. Do you want some things to stand out and others to recede? Again, black and white photography may help you see the tonal range more clearly. You may want to paint or colour your materials, to either tone them down or to brighten them up. You may want to use one

material, like cardboard, and explore different textures with it. Cut out shapes. Buy beads. Buy dots. Or felt pads. The composition can be 'additive' (ie, gluing things together) or 'subtractive' (cutting into or out of things).

4.   You may want to do some sketches in your sketchbook about your composition before you start making it.

Evaluation

This rubric is a guide to student performance, not a point scoring system. The standards capture a grading range based on university undergraduate grading standards. For instance, "Excellent" captures marks from A- to A+. The final calculated grade will be based on an overall weighting of standards met within the different criteria. For example, one project may be stronger than another within the same standard. Therefore, it is possible for identical rubrics to result in different overall assignment grades.

	Excellent	**Good**	**Satisfactory**	**Marginal Pass**	**Inadequate**
Sub-assignment 1.10, 1.20, 1.30. Process In-Class (15%)	All deadlines met	2 deadlines met	1 deadline met	No deadlines met, but some work present.	No In-Class work.
Sub-assignment 1.11, 1.21, 1.31 Process At-Home (10%)	All assignments handed in on-time	Most assignments handed in on-time	Some assignments handed in on-time	No on-time assignments, but work uploaded.	No assignments submitted.
Sub-assignment 1.10 & 1.11. Cropping (25%)	Excellent demonstration of cropping techniques. Excellent exploration of options. Final composition makes excellent use of introduced techniques to direct the gaze.	Good demonstration of cropping techniques. Good exploration of options. Final composition makes good use of introduced techniques to direct the gaze.	Satisfactory demonstration of cropping techniques. Satisfactory exploration of options. Final composition makes satisfactory use of introduced techniques to direct the gaze.	Marginal demonstration of cropping techniques. Marginal exploration of options. Final composition makes marginal use of introduced techniques to direct the gaze.	Inadequate demonstration of cropping techniques. Inadequate exploration of options. Final composition makes inadequate use of introduced techniques to direct the gaze.

	Excellent	Good	Satisfactory	Marginal Pass	Inadequate
Sub-assignment 1.20 & 1.21. Tone and Colour (25%)	Excellent exploration of tone and colour options. Excellent use of techniques to use composition and tone to direct the gaze.	Good exploration of tone and colour options. Good use of techniques to use composition and tone to direct the gaze.	Satisfactory exploration of tone and colour options. Satisfactory use of techniques to use composition and tone to direct the gaze.	Marginal exploration of tone and colour options. Marginal use of techniques to use composition and tone to direct the gaze.	Inadequate exploration of tone and colour options. Inadequate use of techniques to use composition and tone to direct the gaze.
Sub-assignment 1.30 & 1.31. Gestalt Principles (25%)	Excellent use of sketchbook to plan and explore options using sketching techniques discussed in class, including 9-square grid. Excellent execution of final gestalt composition with an excellent level of complexity and craft suitable to the allotted time.	Good use of sketchbook to plan and explore options using sketching techniques discussed in class, including 9-square grid. Good execution of final gestalt composition with a good level of complexity and craft suitable to the allotted time.	Satisfactory use of sketchbook to plan and explore options using sketching techniques discussed in class, including 9-square grid. Satisfactory execution of final gestalt composition with a satisfactory level of complexity and craft suitable to the allotted time.	Marginal use of sketchbook to plan and explore options using sketching techniques discussed in class, including 9-square grid. Marginal execution of final gestalt composition with a marginal level of complexity and craft suitable to the allotted time.	Inadequate use of sketchbook to plan and explore options using sketching techniques discussed in class, including 9-square grid. Inadequate execution of final gestalt composition with an inadequate level of complexity and craft suitable to the allotted time.

Assignment 2. Visualizing the Invisible

Coastal erosion cannot be seen from one day to the next, but it becomes evident over decades. Likewise, we don't see the earth rotate about its axis, but between afternoon and evening we notice changes in light quality, color, and the position of the sun. There are many phenomena - biological, economic, social, physical, virtual - that we can't directly perceive, yet shape the world and our experience of it.

One technique to assist our perception of the invisible is measurement. Measurement connects all disciplines of design, and helps us describe the size of something. A measure can be standardized, like the meter, or invented, like the Smoot (MIT students in 1964 used the height of Oliver Smoot, their shortest classmate, to measure the length of the Harvard Bridge (length: 364.4 Smoots, ± 1 ear)) (https://en.wikipedia.org/wiki/Smoot).

19

Your assignment will be to select an invisible phenomenon, find a way to measure it, and – using your measurements - represent the phenmenon's size, character, and / or shape. You can use established units of measure or, like the MIT students, invent you own.

To make this representation you will undertake an iterative process. In an iterative process you make drafts and prototypes – iterations - and refine them with each new version. Your final representation does not need to be slick or polished, but it should be accurate and precise.

This is an individual assignment, spanning four weeks.

Assignment 3. Visual Instructions for Materials and Systems, or Games

Like architecture and design, games can be thought of as a kind of choreography: structuring interactions between people and their surroundings. Games are symbolic representations which facilitate or direct a set of actions. Like architecture and design, games also rely on interacting with physical, material things (even if they are portals to a virtual world).

In design, we can think of the planning and production of objects, processes, or interactions (like a chair, a building, or user experience) as a choreography of materials, processes, and people; and the documentation used to produce them as a set of rules or instructions. What makes a game effective is how well it can be understood, and how clear it is to participants how much freedom they have within it.

For this assignment you will create a game facilitating the interaction of people, objects, and/or places. The interaction can be lofty, or every day. The game must be played by a group of four to five people, between five and thirty minutes in length, and use resources you can provide or that are commonly accessible [deviations possible upon approval].

You can explore a range of themes with your game. Some examples are provided below.

Assignment 4.1, 4.2, & 4.3. In-Class Exercise

There are instructor and guest lectures throughout the term. At three randomly selected lectures you will complete a five-minute sketching exercise to be submitted before the end of class.

Evaluation

Pass/Fail. Sketches will be collected at the end of class.

Assignment 5.1, 5.2, & 5.3 Reading Response
On Brightspace we will host a comments section for Reading Assignments 5.1, 5.2, and 5.3. You will be required to add to this chat room at least **one comment per set of readings (you do not need to comment on every reading. Just once per reading set)**. Your comment can be a new thread, posing a thought, a question, or request for clarification from the group. It can also be a response to a post or comment from another student as part of a larger thread.

Content should be topic specific. I.e. it should reference the reading directly, although you may add thoughts relevant to your own experience. This can include links to other relevant sources.

The readings are both conceptual and technical aides, so this will be a space to clarify and respond to these. Constructive, respectful critique of readings is encouraged.

This is a shared forum for the free exchange of ideas. Comments must be respectful and adhere to student code of conduct. Any comments or links diverging from this will result in a loss of any credit for the assignment.

Evaluation

Pass/Fail. One comment for each reading set (totaling 3 comments for the term) is a pass. You cannot make-up a comment missed in one set with extra comments in another.