design, innovation, + society

Studio I   IHSS 1610

Professor Raquel Velho

Delivery: Online-Only

COURSE DESCRIPTION

Studio I is the first course in the Design, Innovation, and Society introductory studio sequence. The course offers novel ways of thinking about design in the world, and design's relationship with society—including questions of class, gender, race, and disability.

Through readings and discussions, diverse assignments (such as writing, sketching, skill-sharing), and short design projects, students will be introduced to fundamental design concepts and ideas and will be able to articulate a first notion of their personal identities as designers. Key concepts introduced include: design processes, problem definition, concept ideation and selection, concept sketching and visualization, and low-fidelity prototyping.

This is a communication-intensive course.

LEARNING OUTCOMES

Upon completion of Studio I, students will be able to:
- Successfully name and use key steps of design processes to design artifacts and create low-resolution prototypes of these products. This includes the ability to sketch concept drawings for design pin-ups and the use of paper, cardboard, and scavenged materials for prototypes.
- Communicate effectively via written (reports), oral (presentations) and visual (posters) means the decisions and reasoning behind each step taken in their design process.
- Articulate the definition and importance of design concepts including aesthetics, form, function, prototype, etc.
- Produce written work that accurately summarizes and dialogues with introductory concepts from the field of Science & Technology Studies to discuss the intersections between design and society.
- Participate in collegial academic discussions and critique, having learned to provide feedback for their peers and to accept and use critique addressed to them about the work they produce during the semester (and beyond).
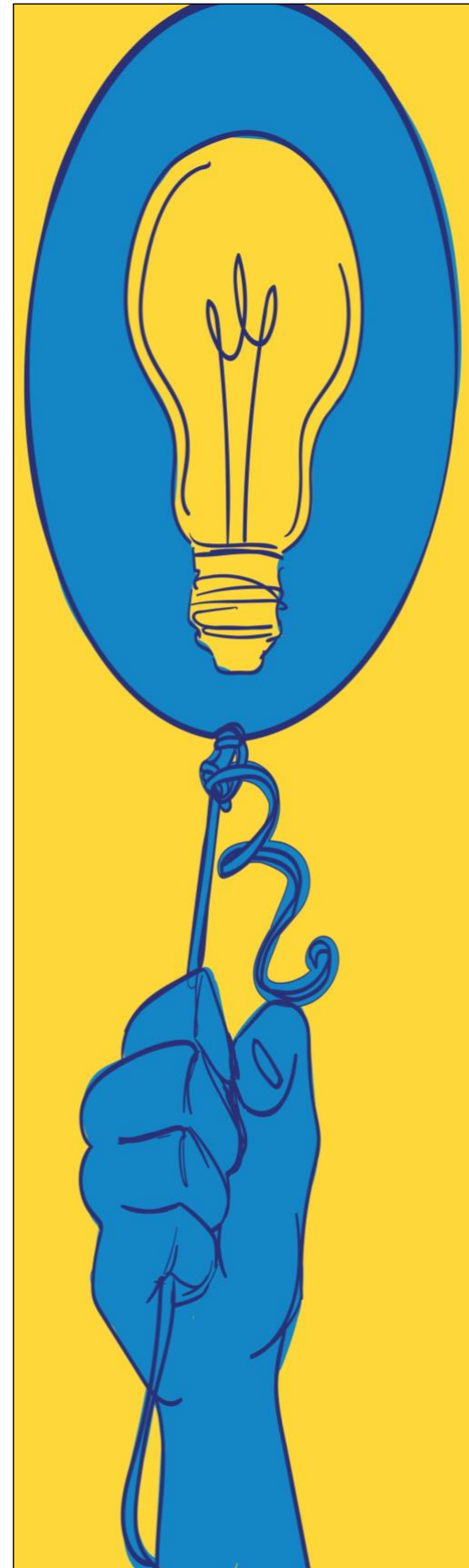
EXPECTATIONS

Studio I is an introductory course in a series of three, scaffolded, design studios (that means the learning outcomes build on one another in that sequence). I don't expect that you'll come into this course being fully capable of articulating how design and society interact, what key concepts of design are, what design processes look like, or to be a star artist, conceptual thinker, or prototype builder. The majority of the assigned readings will be in the "academic register", and if you're not used to reading, synthesizing, and analyzing scholarly articles, some discussions and assignments might feel challenging. That's ok! These are skills and knowledge we will be building up throughout the semester as well as in the rest of the studio sequence with Studios II and III. Be sure to read directions closely, and seek additional assistance during office hours, in the lead-up to assignment deadlines.

I **do** expect you to treat every colleague and concept we encounter with respect and curiosity. You are encouraged to ask questions and clarifications on issues while being aware of where these questions may be coming from, and what your personal position(s) of privilege might be. We will be discussing design and technology from perspectives you might not yet be familiar with, and that can sometimes cause discomfort.

We will work together to make our classroom and our campus a safe, respectful and inclusive space for people of all races, genders, ethnicities, abilities, classes, ages, sexualities, religions, and statuses of documentation.

I expect you to come to class prepared, pay close attention to the details in this syllabus, and be aware of what each week holds. Assignments vary, projects will start and end quickly, so please give this syllabus an attentive read, and have it easily accessible for consultation throughout the semester!

CLASS STRUCTURE

You're likely wondering what to expect from a Studio course that is entirely taught online. I have organized our classes in such a way that the majority of your work will be asynchronous, so that you can work at your own pace and in collaboration with your eventual teammates in more flexible ways as we may be in diverse time zones. We will nevertheless have synchronous discussions twice a week, and our weeks will have a structure that will hopefully create a routine for us throughout the semester.

- **On Mondays**: We will meet for shorter periods and as small groups of four students with scheduled time slots to discuss your projects and research.
- **On Thursdays**: We will meet from 3-5 pm (EST) as the whole group for discussions of the readings of the week.

The asynchronous component of our class will be done via Discord (invitation here). I will be uploading video content and readings. Each week will have a slightly different flow and different weekly assignments related to the readings and video content, so make sure to follow our Discord closely. Descriptions of graded assignments are in syllabus.

TECHNOLOGY

You will have a wide range of types of assignments: from sketchbook snapshots, to skill-sharing, to essays, to creating video presentations, to pop-quizzes. A lot of this is done online, but not solely. For this class, you will need:

- a laptop;
- high-speed Internet access;
- updated web browser;
- access to Discord (invitation link here);
- a good camera that can export videos and images (a recent smartphone will do the trick);
- a sketchbook and pencils/pens (pretty low-tech!).

If any of these are difficult to access for you, please contact me so we can figure out accommodations!

READINGS

This course does not contain a single required book. Instead, I provide a collection of content, from scholarly articles to blog posts to videos to podcasts, that will all be made available on our class LMS or our class Discord. In some cases, they are also hyperlinked in this syllabus, which is interactive and accessible to screen-readers. Let me know if your screen-reader is having difficulties with any aspect of this syllabus so I can correct it.

OTHER REQUIREMENTS

This course will ask you to acquire or scavenge for some materials, especially when we begin working on prototypes. We will be working on visualization and sketching throughout the semester, hence the need for a good quality sketchbook. You can, in fact, choose between a physical sketchbook or do digital drawings if you already use a tablet, as long as you export your images easily (let me know if this is the case, however).

Scavenged materials for prototyping include, but are not limited to, various types of paper and card and cardboard. We will be focusing on quick iterations of low-resolution prototypes, so become used to re-utilizing items easily found in your recycling bins! Some of my favorite materials include:
- Old cereal boxes (as sturdy cardstock);
- Delivery boxes (generally single wall board but sometimes double);
- Newspapers or coupon paper (for rough and quick prototyping);
- Old elastic bands or string (good for mocking some mechanisms);
- Cleaned out cans (be careful with sharp edges).

You are also in charge of acquiring some basic crafting supplies. If you are on campus, you should have access to the Sage 2211 studio space, where you can find these supplies (sadly I cannot be there to verify current stock levels). I recommend having:
- X-acto blades (I also recommend a cutting mat to go with it—don't ruin your floor);
- Scissors;
- Glue (stick, Elmer's and maybe even a glue gun).

CLASS AGREEMENTS AND POLICIES

Addendum in Times of COVID

Syllabi, to me, are a group agreement on terms of engagement in our learning environments. They are not static or hyper-contractual agreements; they are open to amendments and changes as we get to know one another throughout the semester. These are difficult times for all of us, and the semester will likely feel overwhelming. In light of this, I ask us all to move forward in this course with radical care and compassion for one another. This syllabus reflects my usual course policies, but I am aware that we are in uncertain times. I encourage you to keep an honest line of communication with me regarding your capacity in these times, and we will strive together to create an accessible and compassionate learning environment for all.

A Note on Language and Our Learning Environment

In order for all to feel safe in participating, I ask that all students work towards using *inclusive language*. Inclusive language helps foster welcoming environments, strengthens discussions and your academic writing, and reflects best professional practices. For that reason, you are asked to use gender-inclusive, race-inclusive, disability-inclusive language. This can be hard work, and we are all learning and working towards this together, so let's collaborate. For more on inclusive language, Rider University provides a thoughtful guide here. Please take the time to read it.

Attendance

Show up to synchronous discussions. I will be taking attendance at each of those meetings. I know that life happens, so you have two free unexcused absences. Anything beyond that, please remain communicative so we can adjust accordingly. If you are not communicative, more than two unexcused absences will result in a *lowering of your final course* grade by a full letter for each

class missed beyond two. *Four unexcused absences will result in a failing grade*. Excusable absences include illness, disability-related absences, family emergencies, and scheduled Rensselaer athletic events. But, again, please reach out when these are the case.

Participation

Attending class is one thing, but you will not receive a participation grade just for showing up. You are asked to truly engage with the work, the material, the assignments, and with your classmates. Each class is centered on a discussion of a text, on an assignment, or on project critiques. You will not get the most of these classes unless you attend them regularly, do the assignments, and come ready to discuss. You can find more information on grading and what your "Engagement" grade will consist of in the Assignments section below.

Engagement includes active and attentive listening. You will listen attentively to your peers, creating a respectful, inclusive and welcoming place for all. Voices should be heard, so please strive to speak clearly for those of us who may have hearing impairments. Simultaneously, loud interruptions and cutting off other students will not be tolerated either by the myself or discussion leaders

Accessibility

Let's work together to make this as accessible a learning environment as we can. RPI provides its own wording on this (paragraph below), but if you have any accommodations that are related to an undiagnosed disability, for example, and I can make your learning environment more accessible without you having to go through institutional procedures, please let me know.

Rensselaer Polytechnic Institute strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on a disability, please let me know immediately so that we can discuss your options. To establish reasonable accommodations, please register with The Office of Disability Services for Students. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. DSS contact information: dss@rpi.edu; 518-276-8197; 4226 Academy Hall.

Grade Disputes

The Rensselaer Handbook provides specific procedures by which a student may appeal a grade. You should speak to the professor before initiating an appeal. If this does not lead to satisfactory resolution, you have the option of appealing your grade by writing to the head of the STS Department no later than 10 days after your grade has been posted.

Academic Integrity

The Rensselaer Handbook of Student Rights and Responsibilities and The Rensselaer Graduate Student Supplement define various forms of Academic Dishonesty and procedures for responding to them. All forms are violations of the trust between students and teachers. Student-teacher relationships are built on trust. For example, students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are their own performance. Acts that violate this trust undermine the educational process.

The Rensselaer Handbook of Student Rights and Responsibilities and The Rensselaer Graduate Student Supplement define various forms of Academic Dishonesty and you should make yourself familiar with these. In this class, all assignments that are turned in for a grade must represent the student's own work. In cases where help was received, or teamwork was allowed, a notation on the assignment should indicate your collaboration. Submission of any assignment that is in violation of this policy will result in a penalty. If found in violation of the academic honesty policy, students may be subject to two types of penalty. The instructor administers an academic grade penalty and the student is reported to the Dean of Students or the Dean of Graduate Education as appropriate. The first violation results in 0 grade for that assignment. The second violation results in failure of the course. If you have any questions concerning this policy before submitting an assignment, please ask for clarification.

A Note on Title IX

Title IX is a federal law that classifies sex and gender-based violence and harassment as Civil Rights offenses. If you are the victim of a Title IX classified offense, you can file a report, find more information about what happens when you initiate a process, and other resources on the Rensselaer Title IX page.

I need you to know that as an RPI employee I am *required* to report any disclosures of sex discrimination, sexual harassment, or sexual or relationship violence by employees and/or students to the Institute's Title IX coordinators.

GRADING

This course will be graded using a weighted average system. Each assignment within a project also has different weights. Assignments contribute to your final grade in the follow manner:

Assignments	%	Due Date
Sketchbook Snapshots	**10**	Various
Project 1	**25**	
• Object Timeline (30%)		Sep 21
• Essay 1 (35%)		Oct 2
• Final presentation (35%)		Oct 9
Project 2	**25**	
• Essay 2 (35%)		Oct 23
• Redesign pin-up + Presentation (30%)		Oct 30
• Design Report + Prototype (35%)		Nov 6
Project 3	**25**	
• Essay 3 (25%)		Nov 13
• Concept selection + Pin-up (20%)		Nov 20
• Video presentation + Prototype 1 (25%)		Dec 4
• Design Report + Prototype 2 (30%)		Dec 11
Engagement	**15**	

You can interpret your numerical marks throughout the semester and convert them to letter grades following the Rensselaer grading scale:

A 93-100 **A-** 90-92
B+ 87-89 **B** 83-86   **B-** 80-82
C+ 77-79 **C** 73-76   **C-** 70-72
D+ 67-69 **D** 60-66
F 59 and below

ASSIGNMENTS

Project 1: Working Backwards

Your first project consists of working backwards from a designed artifact to understand its history, its purpose, and its aesthetic. I have selected a list of items that we encounter in our day-to-day that seem mundane, but have interesting histories and have changed shape over the course of generations. This will serve us well in thinking about what the use of "design" is, and what counts as a "problem" to designers, and what are the social uses of these artifacts. This project consists of five deliverables, detailed below.

This is a group project (groups of four) with some individual deliverables. Due to its partly collaborative nature, at the end of the project you will submit self- and peer-evaluations. with the goal that you all think constructively about your actions in group projects: *if your peer-evaluations are overwhelmingly negative, you will lose up to 20% of your project grade!* Remember: DIS holds a lot of group projects in your future. Try and learn coping mechanisms and tactics to work constructively and collaboratively in your teams.

With your team, you will select one of five objects (different teams will have different objects): the fork, the pencil, the drinking straw, the bicycle, or the refrigerator. All your deliverables will be in relation to your team's object. I will be providing teams with a small selection of sources on the history and social history of the object for you to begin your research on it, but you are expected to do further research. You do not need to read/watch/listen to all of the sources provided, and you are also not to take these sources as the "final say" on the matter: they are starting points that you should verify, problematize, critique, and engage with.

Snapshots 1 + 2
(1 due Sep 11, 2 due Sep 18)

For specific information regarding format of the snapshots, see Sketchbook Snapshots below.

- **Snapshot 1**: Sketch out your team's object as you find them out in use in day-to-day. How are they generally placed, in what contexts do you find them? Try to show it.
- **Snapshot 2**: Sketch out your team's objects in four different eras of time (this is a pre-exercise to your timeline below: you may not reuse these sketches for your timeline assignment).

Object timeline
(due Sep 21)

This is an individual sketching assignment. You should create a timeline of your artifact and show how it has evolved over the years (decades, maybe even centuries). You should have at least *eight* representations of the artifact in your timeline, but it is up to you when your time period begins and ends! You should upload your timeline to your object channel (e.g. #team-pencil).

This assignment is *not* graded on artistic ability (e.g. "how good" of an artist you are). It is graded on your ability to convey visual information and thinking through visual layouts. For example, you may opt to use simple line drawings (i.e. like stick figures) as long as it is conveying how the lines of the bicycle have changed over time. Like the sketchbook, it is a pass/fail/excellent assignment. You will receive 0 if not submitted, 60 if it is submitted with minimal effort of presentation, or 100 if clear effort was applied).

Essay 1: An abridged history of your object
(due Oct 2)

This is a collaborative essay, 1500 words (±10%). Essays are to be structured pieces, including an introduction that lays out the terrain that will be covered in the piece, a logically organized body that develops a coherent line of argument, and a conclusion.

This essay should provide a brief history of the artifact that your team has been assigned, discussing its invention, the changes it has experienced over time, the diverse groups involved in creating it (or maybe even contesting it). It should briefly discuss whether there are alternative artifacts that also respond to the same "problem" that this one is attempt to solve, to whom it is a problem, and whether it does so effectively. You should offer critiques of the artifact as well as praise, showing what it has done well, and what it has caused further "irritations" of.

Final Presentation
(due Oct 9)

With your team, you should produce a final presentation to share with the rest of the class. This should be a polished presentation, and can either take the form of a podcast or of a video. The content should creatively cover the contents of the essay and is an opportunity for you to practice your oral communication skills. I generally recommend that you write out a script or outline if it makes you feel more comfortable (it will likely be useful for writing out a memo for the week).

Here are some resources for creating your video/audio presentation:
- Video recording: If you have a relatively recent smartphone, I recommend you use the camera on your phone as it is generally higher quality than most integrated webcams on computers. Alternatively, you can record lectures on Zoom (which is free is this modality). In that case, you can just start a new meeting, and hit "record". If you have a Mac, you'll

have access to iMovie which is a pretty straightforward app to use to edit. There are also online resources where you can create videos: look into Screencast-o-matic and Animoto.
- Audio recording: Audacity. That's it. Really. It's easy to use, free, open source, and works across platforms.

Project 2: Working Otherwise

As we continue to discuss "What is a problem?" and begin to think of *solutions*, this project will get you to consider objects *otherwise*. You will be individually redesigning an object of your choice according to a specific issue you have identified in it. It shouldn't be a "vague" object, but rather one that you select down to the brand and type (e.g. you wouldn't choose a "mechanical pencil", but rather the Pentel Sharp mechanical pencil. Like the previous project, you will submit a series of small assignments working towards redesigning the selected artifact according to a problem you have identified. This project will ultimately culminate into your first design report. This is an individual project, with small workgroups (groups of four) for feedback. This project consists of six deliverables, detailed below.

Snapshots 3 + 4
(3 due Oct 16, 4 due Oct 23)

For specific information regarding format of the snapshots, see Sketchbook Snapshots below.

- **Snapshot 3:** Sketch your chosen artifact from at least four different angles.
- **Snapshot 4:** Sketch out different ways that you might think of redesigning this artifact.

Redesign Pin-up + Presentation
(due Oct 30)

Your design pin-up is a well-polished visual representation of your design. It should be made on high-quality paper, and made in ink, not pencil (I recommend doing rough sketches to prepare for the pin-up on your personal sketchbook). This pin-up should not be done on a piece of paper that is torn out of your sketchbook; there should be no tears, no stains, and sloppy work is not acceptable here (it will result in a failing grade). As a sketching exercise, the success of this is not judged through your artistic talent, but rather on the time and craft you put into this pin-up, and how you have thought through visual communication in the layout of the sketches.

Each pin-up should have anywhere between 5-9 renderings of your redesigned artifact, showing on one corner how it originally looks (single sketch) and in other representations how you are changing it. These redesign representations should be shown in *different angles*, but can be done in both orthographic and perspective views, and should communicate use, highlighting both general lines as well as details of the design. There should be minimal text use, with any text use being limited to information and specifications that cannot otherwise be capture on paper (e.g.

specific type of materials). Color can be used *strategically* to communicate the goal of the product, and make it visually inviting.

You will present this pin-up in a recorded **video** presentation, 3-5 minutes, that provides information on what object you are redesigning, for whom, for what reasons, what your redesign will ultimately be, and why.

Essay 2: Design and STS
(due Oct 23)

For this essay, you will be expected to draw from the readings you have done for this class but there might also be other classes that can contribute to it (e.g. STSS-1110 Science, Technology & Society) and you should use other academic sources. Essays are to be structured pieces, including an introduction that lays out the terrain that will be covered in the piece, a logically organized body that develops a coherent line of argument, and a conclusion. Essays should be 1000 words (±10%, and include your word-count underneath the title of your essay). You will be addressing the following question:

> *What can design work learn from Science & Technology Studies?*

Design Report + Prototype
(due Nov 6)

This will be your first go at a design report. Each design report should contain:
- A title page that gives the name of the redesigned product, the names of group members (or individual), and a short abstract that describes the artifact in three or four sentences.
- Judicious use of visual images: your sketches, your pin-up, good quality pictures of your prototype. These should support and illustrate information provided in your report.
- An introduction that lays out what you will be discussing in the report.
- A design process statement: an 800-word statement that describes your design process in thinking about the project. The design process should include references to *problem definition*, *ideation* and *concept selection*, and *prototyping*.
- A user statement: this should be a 500-word discussion wherein you are identifying who your user group is. You should be as specific as possible in this discussion, focusing on what makes the needs of this specific demographic different from other groups. What makes them different not only from other *obviously* different groups, but also from groups that *are* similar. How you are responding to these needs with this specific redesign should be discussed. Beware of stereotypes: be critical in your initial assumptions about specific user groups and work towards refined, polished discussions.
- Next steps: In taking this product forward, how would begin thinking about *building and testing* the artifact? What have you learned from the first prototype you have made, and how would you test it further?
- A brief conclusion that summarizes what you have accomplished in this project.

Your report should be compiled as a single, well-laid out and formatted PDF document, and submitted via our course LMS.

Your prototype should be done in either paper or cardboard or a mix of both. No other materials are permitted for this first attempt at prototyping. It should be submitted *visually* in the report with high-quality images of it from different angles.

Project 3: Working Forwards

Your final project of the semester is your first "free reign" where you design an entirely new object. You will be working in small groups of 3-4 students (you can indicate preferences, but I will get the final say in the group formations). You will be putting together all of the sections of the design process you have learned this semester: problem definition, ideation, concept selection, and prototyping (yes, this will be challenging in a group assignment online—we will work this out). The theme for this project is simply "The Future". We will be integrating design concepts that go beyond much standard design classes, and your challenge is to design *inclusively* and aware of what *your* identity as a designer is within the world of design. This project consists of six deliverables, detailed below.

In designing for the future, there are some things to consider.
- What does the future hold, and what 'future' is it? You will get to "design" your own parameters of the future.
- For *whose* future will you be designing?
- Who are *you* as a designer in the future?

It is a collaborative project, and each of the deliverables should be shared work (yes, even the prototyping—this might mean some online building sessions where multiple people try different approaches, but you select one of the prototypes to be submitted at the end of the project). There will also be a self- and peer-evaluation at the end of the project, with the goal that you all think constructively about your actions in group projects: *if your peer-evaluations are overwhelmingly negative, you will lose up to 20% of your project grade!*

Snapshots 5 + 6
(5 due Nov 13, 6 due Nov 20)

For specific information regarding format of the snapshots, see Sketchbook Snapshots below.

- **Snapshot 5:** Sketch out objects from a favorite alternative reality (this can be from a fantasy or sci-fi series, for example).
- **Snapshot 6:** Sketch out various ideations for artifacts you and your team are considering as possibilities for this project.

Essay 3: Designing the future
(due Nov 13)

This is a *definition* essay, written collaboratively with your group mates. Following our discussion on how one's vision of 'disaster' or 'apocalypse' might already be another person's reality, you are to write a 1500-word essay discussing the following topic:

How does your design project relate to real world situations?

You are expected to discuss what *your* definition of the future is for this project (and why, what reasons lead you to believe that this is what the future holds), for whom you are intending to design, and how this 'future' might already exist in the world. For the latter topic, you are to provide <u>at least three</u> *academic, peer-reviewed sources* that discuss this real-world situation (this will serve you well for defining your problem space and providing design inspiration!).

Concept Selection + Pin-Up
(due Nov 20)

This deliverable consists of two parts: a decision matrix with at least five different criteria and short write-up (500-words) explaining the criteria selected and the results of the matrix, and a pin-up of the ultimately selected artifact for this project. For information on the pin-up, see Project 2 pin-up above (you do not need to do a recorded presentation). For the decision matrix, we will do trial ones in class online.

Video Presentation + Prototype 1
(due Dec 4)

Your team will record and edit a short (7-10min) *video* presentation that is expected to cover:
- **The Future:** Tell us about the future that you envision.
- **Problem definition**: What "how can we" statement is this design attempting to answer?
- **Ideation/concept generation**: Discuss the various design ideas that you had. Discuss some of the pros and cons of each. How do they each respond to the particular world you have created?
- **Concept selection**: Discuss the process of selecting this particular design that you used for your pin up. Discuss your Pugh Matrix.
- **Prototype**: You should have started working on a paper/cardboard prototype for this design. Show it and how you and your team have learned from it, and what your next steps are.

The presentations should be uploaded to our Discord server so that all can view it and provide feedback via comments and in our synchronous group discussion.

(due Dec 11)

For more information on what is expected in your final report, see the Project 2 Design Report entry above. The prototype will likewise be submitted visually with high-quality pictures being included in the report.

Sketchbook Snapshots

In addition to the snapshot assignments linked to the three projects, you have an additional 6 snapshots for the semester. You are required to do four of these, for a total of 10 snapshots in the semester. These exercises are a way of exercising your sketching abilities and visual representation of artifacts. Sketching is a practice like any other, and engaging with it daily, or at the very least weekly, will be a way for you to flex your designer muscles. These snapshots are graded on a pass-fail basis. If you complete all 10 snapshots (the six linked to projects, described above, plus another four offered here), you will receive full marks for these. Completing all 12 snapshots can function as **extra credit** for an additional half-letter grade (e.g. B to B+) in your lowest project assignment at the end of the semester.

Sketchbook snapshots are kept in your personal sketchbook. Each snapshot should consist of *two pictures* of your sketchbook of pages laid out open (see example picture below from Space10 founder's sketchbook, Carla Cammilla Hjort), all pages containing multiple sketches of the sketchbook assignment required. In other words, I should see four different pages total. Submissions will be done via rpi.box.com, where you will have your own Box folder shared with me. Each image should be uploaded with the title of the snapshot assignment as follows: lastname_snapshot1_1, lastname_snapshot1_2. By the end of the semester, you will have assembled a beautiful online sketchbook. If you have an alternative suggestion for submissions, please let me know.
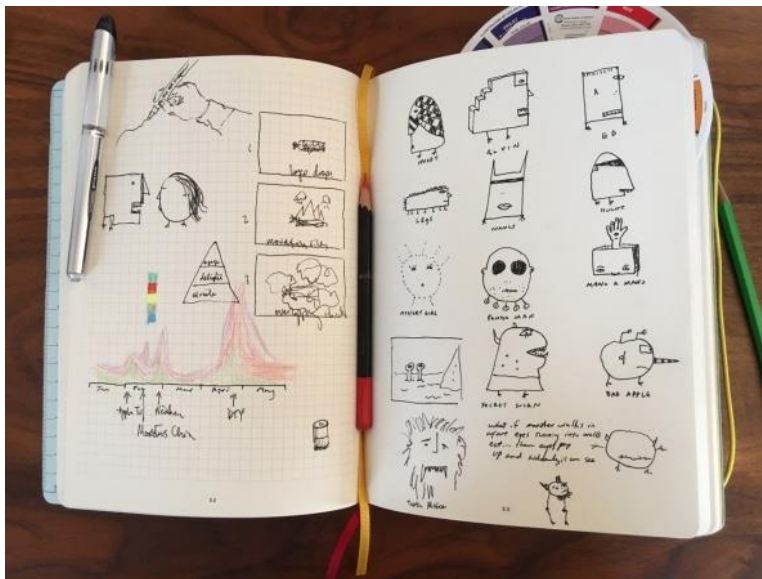
Other snapshot assignments (pick at least four to complete by the end of the semester):
- Sketch out "exploded views" of objects.
- Draw musical instruments.
- Draw kitchen objects.
- Draw objects you find on your desk.
- Draw physical interfaces.
- Draw objects without using lines, only using light and shadow.

Please be comforted at the thought that this assignment is *not* graded on artistic ability (e.g. "how good" of an artist you are). It is graded on your completion of all required items, and is graded on a pass/fail/excellent scale.
- **Excellent** – A (100): You have submitted all required sketches diligently and on time.
- **Pass** – C (75): You have submitted 7 but fewer than all of the required sketches, or you have done them sloppily and without thoughtful application.
- **Fail** – F (0): You have submitted fewer than 7 of the required sketches.

Engagement

As mentioned in our class agreements above, your Engagement grade is not merely an attendance grade. It constitutes 15% of your grade because I expect you to show up and engage with the material. To succeed in this class, especially in its virtual form, requires diligence in participation and engagement. It doesn't only mean "speak" when we are doing our synchronous discussions: it also means participate in the chat (especially if you are hesitant to speak up in conversational settings), actively contribute to our Discord server, and upload the weekly homework assignments in a timely fashion. You will be graded on a scale for engagement:

- **Excellent** (100 – A): You are consistently contributing to class, referencing readings, past class discussions, and knowledge that you bring in from other spaces. You are respectful and encourage your colleagues to participate, asking them clarifying and engaging questions, and providing feedback to others' projects. You submit weekly homework diligently and in a timely fashion.
- **Good** (85 – B): You are present and prepared for class, and engage sporadically with some references to readings and past class discussions. You provide some feedback to your colleagues' projects but could engage in our conversations more actively. You mostly submit weekly homework in a timely fashion.
- **Adequate** (75 – C): You are present and prepared for class, but your contributions are limited, with questions and comments often being limited to clarifications or surface-level observations about the readings. You rarely engage in Q&A for your colleagues' presentations. You are sporadic in submission of weekly homework.
- **Minimal** (50 – F): You are often unprepared for class or do not contribute, or contribute with single comments in discussions (i.e. "I agree with them.") Your weekly homework is rarely submitted, or is done sloppily.

Mutual Aid Skills Pool

We are all excellent resources of knowledge and skills, and I cannot wait to see what talents you are able to bring to the table and share with one another. Our *Mutual Aid Skills Pool* is a way for you to share your immense capabilities: perhaps you are a pro video editor, sound engineer, proof editor, wood-turner... You can share these skills with the class to gain *extra credit*.

To do so, simply post a call on our #skills-pool channel on Discord. Depending on the skills you are able to offer, you might work with a single other person, or group, or perhaps we might even dedicate class time to it so you can share a tutorial with the whole group. For it to be considered an official contribution to our skills pool, you need to have posted the call, and have acted upon it (i.e. simply posting in the channel does not count towards extra credit).

Contributing to the skills pool means you can gain an additional half-letter grade (e.g. a B becomes a B+) in your lowest project grade in the semester *or* to your engagement grade, depending on where you need it most. However, I would encourage you to do this beyond the extra credit: it is an excellent way to fine-tune your skills, to practice oral communication and teaching skills, and to forge a strong DIS community.

CLASS CALENDAR

This course schedule contains the general timeline that we are following for the semester. It is meant to provide you with a guide of where we are going next. It does not list your homework for the week—that information will be posted on our Discord server after our synchronous meeting each time. Please make sure to add to your calendar our regular meeting time, which will always be on Thursdays, from 3-4:50pm, to discuss the assigned readings and homework, and to attend your regular meeting slot on Monday, which will be established in our first meeting of the semester, Aug 31, at 3pm.

Week 1: Welcome to Design, Innovation, and Society!
(Aug 31, Sep 3)

This week we will focus on introducing the course, understanding the flow of our workspaces, providing overall project descriptions, clarifying course expectations and assignment questions. There will a lot of general maintenance work to do as we warm up to the new online environment. This week will also have a slightly different format than most weeks as we meet as a full class synchronously twice: on Monday as a Meet & Greet to discuss the course and syllabus, and on Thursday for our full group discussion of the assigned reading.

Monday
- Synchronous Meet & Greet: 3-4:50pm (EST).

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 2: What is Design? Part 1
(Sep 8, Sep 10) ** Note we do not have class on Monday due to Labor Day. Tuesday meet instead.

There are many narratives that can be used to frame our general idea of what "design" is. We will be reading various narratives about "design" this week and next, some that might be surprising to us, and some that will sound familiar. You will also begin to learn to watch for design out in the world as you begin "snapshot" assignments. This week we will also begin our more "standard" week. On Mondays, we will meet for small group discussions with your project teams as you begin to settle into your first project. On Thursdays, we will meet for our full group discussion of the assigned reading (available on LMS and Discord).

Tuesday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 3: What is Design? Part 2
(Sep 14, Sep 17)

This week, we will trouble the past week's discussion of "design": does design always solve a problem? Can design *create* problems? And whose problems are we talking about? This will both set the scene for our new module on "Problems" next week, as well as frame our understanding of design as much broader than most design programs.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 4: What is a Problem?
(Sep 21, Sep 24)

Designs are often framed as artifacts or "solutions" to problems. We therefore need to explore that idea of "problems". What is a problem, who is defined by, who is it problem for?

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 5: Observations and Problem Definition
(Sep 28, Oct 1)

Observing the world around you is a good way to see things that could do with a little improvement, or that are causing us additional trouble than they maybe should. Finding patterns of issues is a good step to define a problem, though we always should be aware of who we are thinking about when we are defining it as a problem. This week we will explore the idea of "observing" to define a problem, to then add the additional layer of research.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 6: What are Solutions? Ideation in design.
(Oct 5, Oct 8)

Once we have our problem we can start thinking of ways to solve it. This week is dedicating to thinking about solutions: what are they, what can they look like? The first step is to brainstorm a diversity of potential solutions. This is what we call *ideation*. This week is dedicated to learning about brainstorming in the ideation process.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 7: Empathy and Personas
(Oct 15)

We've thought of a variety of solutions to a problem. But what are ways of narrowing them down? Thinking about who you are designing for, and who you are as a designer in the process, is an important way of thinking about what your "solutions" are good for, and what they are not.

Monday
- **NO CLASS: Indigenous People's Day.**

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 8: What is an Appropriate Solution? Selecting a concept.
(Oct 19, Oct 22)

Concept selection is when you narrow down your solutions to a single one. This week is dedicated to thinking about the narrowing down from the ideation process to selecting a concept to focus on and take forward. Thinking about who we are designing for can help, and we will also introduce the decision matrix as a potentially useful tool.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 9: What is a Prototype?
(Oct 26, Oct 29)

Prototyping is the process of testing out a concept. In DIS, we encourage moving into the prototyping process as quickly as possible to fail, and fail often, and learn from our failures. Prototyping low-resolution tests of concepts is a great idea of figuring out whether it's a worthwhile pursuit. This week will be dedicated to thinking about prototypes, and testing out some of the materials we can use to prototype.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 10: Open Studio Week
(Nov 2, Nov 5) ** Election Week.

This week will be dedicated to finalizing your Project 2. All assignments will be due by the end of the week, and we will do some reading discussions together. Otherwise, you should take the time to finish off your last deliverables and breathe: the end of election season can be a heavy time.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 11: Designing for the Future: Your Final Project
(Nov 9, Nov 12)

We've gone through the design process in detail now. You should be able to name the four classic steps of any project: problem definition, ideation, concept selection, and prototyping. We've come to understand that it isn't a singular path forward, but real multiple loops that require constant refinement, pivots, and, at times, may end in dead ends. This week begins your final project. We will be discussing the Future, and what it holds, and what futures can represent in design and beyond.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 12: Off the Beaten Path 1: Crip Technoscience
(Nov 16, Nov 19)

What are other forms of knowledge, design, and technology that we haven't seen represented i-depth this semester thus far? For the last weeks, I will introduce you to important concepts that should be useful grounding work for your future practice as designers. We are trying to counter the usual narrative of design, to expand it beyond Western ideals of post-industrialism and embrace craftwork, BIPOC design work, and disability and access work. We begin by presenting the notion of crip technoscience and hacking.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 13: Off the Beaten Path 2: Afro-Futurism
(Nov 23) ** Thanksgiving Break Week

We continue this week to introduce the work of Afro-Futurists. From the music world, with Parliament/Funkadelic, to literary worlds, with Octavia Butler, to design work with Atang Tshicare, afro-futurism has offered us other visions of the future. As we do not have class on Thursday, please complete assigned readings and listenings for Monday.

Monday
- Synchronous Reading Discussion: 3-4:50pm.

Thursday
- **NO CLASS: Thanksgiving Break.**

Week 14: Off the Beaten Path 3: Design as Pleasure
(Nov 30, Dec 3)

It is easy to minimize our discussions of "design" as being about "problem solving". But as we have seen this week, the definition of a problem is complex, and sometimes "design" isn't really solving much (remember the "usefulness of uselessness"). This week we will explore the idea of pleasure in design, tying it back with discussions of aesthetics.

Monday
- Synchronous meeting: You will have signed up for a time slot. Attend that time.

Thursday
- Synchronous Reading Discussion: 3-4:50pm.

Week 15: Open Studio/Final Class
(Dec 7)

This week, we will have watched all the final presentations and have one final synchronous session together to discuss this semester. It will be our last session together. You should use the rest of the time this week to finalize your deliverables for project 3.

Well done on completing this semester!

Monday
- Synchronous Final Meeting: 3-4:50pm.

YOUR STUDIO I INSTRUCTOR

Hi! I'm Professor Raquel Velho.

You can call me Professor Velho, Dr. Velho, or Raquel. My pronouns are she/her/hers, and I'm Brazilian (you'll hear a slight accent). I'm a sociologist of technology and have spent a long time thinking about how design impacts our world. When I'm not teaching, my research is about transportation systems and disability, or scientific research facilities.

In normal years, you'd be able to find me hanging around our studio classroom (Sage 2211), or in my office in Sage 5114. Due to the pandemic, I asked for health-related accommodations to teach my classes online in order to keep myself safe.

I'm sure many of you would rather be in person (believe me, I would, too!) but this syllabus has been specially designed for this new online world. I'm excited to teach this way. We will likely be working out some issues along the way, and I encourage students to give me feedback of *what works* and *what doesn't*. Let's make sure this is a great experience for all of us!

Here are ways for you to contact me:
Email: velhor@rpi.edu
Twitter: @RSVelho

I will also be holding online office hours on Tuesdays 4-5pm and Thursdays 9-10am.
To find me, just log on to our Discord server. I will be online, and you can send me a direct message. We can either just chat, or hop onto a voice/video channel. This is entirely up to you and your comfort levels. If those times don't work for you, drop me an email to schedule an appointment.

Credits:
Visuals and logo work designed by DIS alumnae, Korryn Resetar and Lilit Balagyozyan.
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