LMC 6650 CRN 26881 Project Studio: MN (Material Interaction Design) 26656 Spring 2023

Spring 2023
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Tue 12:30-3:15PM
TSRB 317 (corner lab)
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office hours: Tue 10-11 (in person but reach out for online option)

Overview

What can we learn from our interactions with material things to improve HCI and digital media? This course combines physical computing and tangible interaction design on the one hand, and material culture and craft practices on the other. We will work with traditional materials such as wood, clay, fabric and talk to crafters to learn about their practices with these materials. These encounters will serve as foundations for designs of novel interaction pieces that "follow the material" (Ingold). The class will cover current themes in HCI and design that include material experiences (Karana), kinship (Haraway), and care (Bellacasa) and it will do so through a project-driven hands on approach. Methodologically, the class will work through discussions and readings as much as projects that use critical making and hybrid craft.

This course should speak to students who are ready to explore new paths in tangible interaction design from soft circuits to paper computing and clay interfaces. No particular experience is required but some knowledge in hardware prototyping (Arduino) would be helpful.

The course reaches across disciplines as it includes approaches from material culture, HCI, and craft research. Students should expect readings, discussions, varying material explorations, critiques and iterative prototype developments. The course will constantly involve some work with clay in projects and exercises.

Knowledge in the use of Arduino or related technologies is beneficial but not required.
No prior experience with ceramics is required but willingness to dig in mud and to dive into tangible interfaces to learn from both is necessary.

Schedule

(note that changes are bound to happen please check the announcements on Canvas)

Day	Topic	Projected reading
1/10	**[online session on Teams]** **Intro to course** Debating the syllabus and procedures C I: What is the problem? C II: What are “vital media”? C III: How do we relate (materially/ culturally)?	 **ASSIGNMENT for next week**: Material’s story (read Dunne/Raby)

1/17	**[online session on Teams]** Pre-discuss: syllabus settling **Going Beyond Critical Making** C I: The nature of Critical Making C II: Stepping beyond CM In-class activity: group CM exercise	Syllabus stabilized Ingold Ratto/ Hertz **ASSIGNMENT for next week**: CM exercise
1/24	**Materials Relating > body practices** C I: What is somaesthetic design/ embodied design ideation? C II: Of critters and string figures In-class activity: Karana "material experience" exercise	 Höök Wilde/ Vallgarda/ Tomico Haraway Karana **ASSIGNMENT for next week**: sensory speculation exercise
1/31	**Materials Relating > voices of materials** C I: The value of "need" CII: The value of "risk" Method: Practice Observations and activity networks	 Nitsche Pye (Malafouris) Keller&Keller (Mäkelä/ Nimkulrat) **ASSIGNMENT**: settle into material groups for the "material analysis" also start organizing your crafter observation (selection, contacting, scheduling, prep)
2/7	**Materials Relating > material agency** C I: What is material agency?	 Cole/ Perner-Wilson Barad; Bennett **DUE**: material analysis presentations
2/14	**Humans Relating > needs and performance (the individual)** C I: Performance and expression C II: How do we individuate? … toward objects?	 Schechner Simondon
2/21	**HCI and materials presentations**	

2/28	Work on project	**Due**: Practice observation presentation/
3/7	Work on project	
3/14	Work on project	**Due**: Technical prototype presentation
3/21	Spring Break	
3/28	Work on project	
4/4	Work on project	
4/11	Work on project Discussion: Class reflection	**DUE**: final project presentation
4/18	Individual discussion of documentation NOTE: this is in reading week	
4/25	Assembly of you write ups/ editorial session	
5/2		**DUE**: Final write up + Documentation

Grading and Main Deliverables

Assignment	**Description**	**% of final grade**
Method assignments	You will do a couple of method exercises as homework in the first phase of the course; feel free to concentrate early on the material you will chose for the final assignment but you can also experiment across different materials **Criteria**: completeness, realization of the method proposed, possible critique of method, timeliness, clarity, visual appeal, communication of results; **Deliverable**: submission of jpg or pdf on Canvas; short informal discussion/ presentation in class **Due: (on multiple weeks)**	10%
Paper presentation	Select a paper from the HCI community (EKSIG, CHI, TEI, DIS, GRS) and present the project in class; **Criteria**: put the work in relation to the discussions we had in class; relate it to the readings (in class but also beyond class where you can); develop the key contributions and provide key questions that arise from the work; lead a discussion in class to tackle these questions **Deliverable**: presentation in class and ppt on Canvas **Due: 2/21**	10%
Final Project	For the final project you will ideate, design, and implement a proof-of-concept prototype for a material-based interaction design. The main concern is that the design should be clearly	

	inspired by the material conditions first and emphasize the differences, new questions, problems, or opportunities that such a new focus provides. You will first explore the material itself using the methods we discussed in class; explore its forms of material agencies, needs, connections, abilities, appearances, states etc. Second, you will identify a practitioner's relationship to that material; observe a crafter working with this material, learn about techniques, tools, workspaces, map out the practice Third, we will move into the design, starting with the ideation. You will present your initial idea(s) in a sketched form in class and present the question, idea, problem, that drives it. This is followed by an informal presentation of a technical test of the main technological feature. Finally, you present your project in class.	
	First you research the material; document this exploration and experimentation exhaustively! Work with iterative design sketches that you collect and expand on; utilize tools (like the methods we used in class) that help you to visualize the relationships and dependencies; the outcome is a detailed material exploration that identifies key relations through various data (images, videos, design notes, quantifiable data, relational experiments, speculations) you present the process how you arrived at this collection as well as resulting data in class in the form of a highly visual presentation (model it already after a possible visual zine format); connect the process also to our readings and in-class discussions **Criteria**: use of multiple methods, details in the exploration, aesthetics (visuals, textures, moving images, sketches), richness of the overall result, timeliness, presentation (fluency, preparedness, shared roles) **Deliverable**: presentation in class and ppt on Canvas **Due: 2/7**	10%
	Second, you will do a practice observation of a crafter working with that material. You will visit a crafter who works with this material and observe their techniques, tools, work conditions, approaches to the material (as much as possible). Take as many images as possible and prepare your questions in advance. You should end your practice presentation with a first ideation presentation where you sketch out your initial idea(s) and how they relate to the material and the practice **Criteria**: depth of visual as well as other material (did you cover multiple areas from space to tools to practices to variations in techniques?) **Deliverable**: presentation in class, ppt on Canvas + at least 10 images of process + 10 of the result **Due: 2/28**	10%
	Prototype presentation: part of the evolution from the concept to the design to the implementation is the delivery of a low fi	

	prototype of your project; you present the prototype informally in class **Criteria**: does the technical solution work and is it feasible? If not: do you have an alternative? **Deliverable**: presentation in class + 10 images on Canvas **Due: 3/14**	
	Final presentation: you will present your project in class **Criteria**: is your design material-based? Does the project build connections between the material itself and the practice observed toward your own interpretation? Is the result engaging and does it further the discussion? Connect the project to at least 2 readings; fluency of the presentation (timely, focused, all members active, well-structured, good visuals, good delivery) **Deliverable**: presentation of the piece and an explanatory ppt in class; submit ppt and at all available material (at least 10 images covering process and 10 covering the result) on Canvas **Due**: **4/11**	25%
Documentation	You will document your results; this will be done in two ways: ➢ a short YouTube style video (~ 2 min) that explains its nature, evolution, and results (worth 5%) **Due: 5/2** ➢ a critical write up, which will take the form of a pictorial (modeled after DIS pictorials) (worth 10%) **Due: 4/25** both on Canvas	15%
Participation	active in discussions, active in example sessions; active in design meetings, teamwork, homework; activity and engagement in all meetings; attendance is not participation!	20%

No use of cell phones (including texting) in class.

100-90% = A
89-78% = B
77-64% = C
63- = D

Grading of individual pieces will be in percentage
Late submissions lead to automatic reductions of the grade unless a valid excuse is provided. Any 1 day delay, meaning anything after 5pm of the due day, will have 10% reduced from the grade; any 2 day delay will have 20% reduced, 3 day delays will not be accepted.
The Honor Code of Georgia Tech applies (see http://www.honor.gatech.edu/).

Attendance

Unexcused absences always affect the participation grade – not matter how many. If a student has four unexcused absences, the student's participation grade will be lowered by 8 points, with the fifth an additional 8, six absences are an automatic failure of the class.
If a student needs to miss a class, contact the instructor 24 hours in advance. If Institute Approved Absences collide with class times please contact the instructor in advance to make sure the workload can be distributed.

Late submissions of any deliverable will receive a lowered grade (10% if up to 24 hour late, an additional 10% if up to 48 hours late, no submission is accepted beyond 2 days after the due date).

Inclusivity Statement

The Ivan Allen College of Liberal Arts supports the Georgia Institute of Technology's commitment to creating a campus free of discrimination on the basis of race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, or veteran status. We further affirm the importance of cultivating an intellectual climate that allows us to better understand the similarities and differences of those who constitute the Georgia Tech community, as well as the necessity of working against inequalities that may also manifest here as they do in the broader society.

There is zero tolerance for discrimination or harassment on any basis, including but not limited to race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, or veteran status. Georgia Tech is committed to providing its staff, faculty, and students the opportunity to pursue excellence in their academic and professional endeavors. This opportunity can exist only when each member of our community is assured an atmosphere of mutual respect. Georgia Tech's full antiharassment policy is online here:
http://www.policylibrary.gatech.edu/anti-harassment-policy
Violation of any of these expectations will result in appropriate penalties, including but not limited to reduction of grade, rescinding of lab access, or disciplinary action.

These statements might read a bit impersonal and detached but I want to re-emphasize that the class space should be free of harassment of any kind and be a safe space for us to creatively engage together.

What to do if you fall behind or are stressed

Your health is more important than this class. Sometimes it is difficult for the instructor to have enough personal contact to see how you are. But you should know that your health and wellbeing are much more important than any grade or coursework. Let us help if any situation develops – the earlier the better. Again, please inform the instructor of any issues or challenges and do not hesitate to reach out.
Coursework can be demanding and everybody can encounter challenges sometimes. There are many reasons, such as an illness or a family emergencies, that might affect focus and studying conditions. If this happens to you, come and see the instructor about it as soon as possible to make alternate arrangements for work that has been missed, and continue coming to class.
If you encounter more pressing difficulties, anxieties, or mental health challenges, then please let the instructor know but also turn to the support we have in place at the Institute. This includes the Counseling Center (https://counseling.gatech.edu/) and CARE (https://care.gatech.edu/).

ADAPTS Accommodation

Students who feel that they may need an accommodation for any sort of disability, please make an appointment to see the instructor during office hours.
Students with disabilities should also contact Access Disabled Assistance Program for Tech Students (ADAPTS) to discuss reasonable accommodations. For an appointment with a counselor call (404) 894-2563 (voice) / (404) 894-1664 (TDD) email dsinfo@gatech.edu or visit Suite 123 in the Smithgall Student Services Building. More information at:
http://www.adapts.gatech.edu/ .

Sharing of work

Please be aware that your work might be accessible to others in future classes or in other academic presentations. This regards your code, presentations in class, as well as the videos and other deliverables. Participation in the course implies permission for sharing work with others in the class and with future students if your work is judged to be a valuable example. If you are not comfortable with this, please let the instructor know. Unless you inform the instructor in writing (email) that you do not want your work shared with others in the context of current and future versions of this course, it is assumed that it is available.
The project videos might be shared openly by the instructor or the department online as showcases for the class or the program. Unless you inform the instructor in writing (email) that you do not want your work shared, it is assumed that it is available.

Learning Outcomes

- Demonstrate the ability to analyze and critically evaluate existing digital media artifacts, services, and environments using formal knowledge, and to explain and defend one's critical evaluation.
- Demonstrate the ability to devise, design, create, and assess prototypical digital media artifacts, services, or environments and to contextualize them within recognized traditions of practice.

- Demonstrate ability to use common digital media authoring tools
- Demonstrate ability to set up and use common tools for writing code and managing the software development process
- Demonstrate use of digital media to create prototypes
- Demonstrate good time management skills
- Demonstrate ability to set realistic goals
- Can develop interactive media artifacts
- Can design and create digital artifacts that create the experience of agency for the interactor.
- Can communicate, coordinate, and work productively as a team member.
- Can summarize their work orally and in written form using formal terminology
- Can justify the design choices in their works

References

(selection)

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