ENGL 3374, Fall 2016
Dr. Estee Beck
Writing, Rhetoric, & MM Authoring

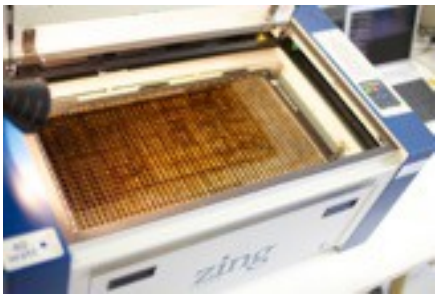
FabLab Assignment Packet

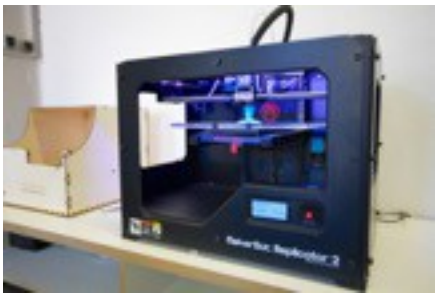
[Amsterdam Fab Lab at The Waag Society. CC BY-SA 2.0]

The university's FabLab makes soft- and hard-wares available for students, faculty, staff, and community members to design, develop, and create objects. For this assignment, you will make/create an object using the different technologies from the FabLab, and engage in the invention to delivery process (or canons of rhetoric) to develop a solution to a problem on campus.

To participate in a global society . . . teachers and students need to expand their appreciation of the power of print and nonprint texts. Teachers should guide students in constructing meaning through creating and viewing nonprint texts.

—National Council of Teachers of English (NCTE)'s "On Viewing and Visually Representing as Forms of Literacy" published in 1996





Images to left from top down: Laser cutter & MakerBot Replicator. From FabLab Berlin.

For this project, you will want to think about a problem existing on campus that you can provide a solution to using the fabrication technologies in the FabLab. Maybe the problem is physical, like some kind of signage issue or wayfinding technique, or maybe the problem is social, cultural or political and you want to make an object or objects to present information and possible persuade people to action.

Learning Outcomes for this Assignment

- Identifies the need to invent, design, fabricate, build, and deliver some "thing" in order to express a solution to solve a problem;
- Applies design praxis by defining and analyzing the problem, identifies project requirements including time and financial constraints and materials, creates and tests prototypes, revises and modifies the design, and takes intelligent risks and learns from failures;
- Demonstrates time-management best-practices, including outlining project milestones and critical paths, and builds in extra time for prototyping, revisions, and failures;
- Assess the availability of tools and materials for the solution to the problem by selecting the best tools and materials, thereby employing rhetorical decision making, and seeks alternative tools or materials when a required tool or material is not available;
- Demonstrates an understanding of intellectual property rights and ethical decision making issues surrounding maker culture;
- Employs safety precautions when using equipment and materials, including wearing personal protective gear; and
- Transfers knowledge gained into workforce, community, and real-world situations by teaching what the student knows to less experienced makers.

Products for this Assignment:

- A 250-500 word response to David Sheridan's Fabricating Consent;
- A 2-page progress report on the project;
- A prototype of the object, including multiple sketches & the physical object;
- Usability testing procedures;
- A description of the object in brief abstract form (250 words);
- The object (or objects) themselves, placed in the location of need on campus;
- 3-5 quality high res images of the objects (both in and out of the location on campus; and
- A 4-6 page final report on the project.

While not listed on the course schedule, we will discuss the genres of progress and final reports, how to write an abstract, and how to take 3-5 high res images. The progress and final reports will embed areas that link to the student learning outcomes.

Additionally, it's helpful for students to keep up with productivity logs (examples later in this packet), as the responses will help fill out the progress and final reports.

Deadlines and Points:

- 9.21.16: The 200-250 word response due via direct message to Dr. Beck on Slack (worth 25 points)

- 10.5.16: The 2-page progress report due via direct message to Dr. Beck on Slack (wroth 50 points)

- 10.12.16: The prototype(s) of the object(s) & usability testing procedures and test in class (worth 100 points)

- 10.16.16: The abstract, 3-5 images, 4-6 page report on the project by midnight via direct message to Dr. Beck on Slack (worth 125 points)

The entire project is worth 300 points; however, the points are staged into discrete, smaller units.

Finding a Solution to a Problem:

This project asks you to find a solution to a problem on campus. The problem can be physical or can address a political, social, or cultural issue. For example, Dr. Beck sometimes parks in a faculty parking lot that has no signage about the direction cars may park in diagonal spaces. However, if a driver parks her, his, or zir's car with the front of the car facing the exit of the parking space, then UTA's Parking Services will issue a ticket (even though there are no signs prohibiting this method of parking posted in the parking lot). Dr. Beck thinks this is a problem, and she might create signs, using the fabrication technologies, to post in the parking lot to alert others. Dr. Beck might use multiple fabrication technologies in the FabLab, including the ShopBot, the less expensive 3-D printer, the vinyl sticker machine, and maybe if she was feeling very creative, the sewing machine for some kind of additional felt, thread, and yarn-bomb-type signage.

TIPS FOR SUCCESS:

Walking into the FabLab and working with staff members to learn new technologies may feel overwhelming. While we will take a class tour of the space, you will want to keep a journal and/or write brief notes about your experiences, thoughts, and feelings before and after each visit to the FabLab. Plus, these notes will help you generate content for the progress and final reports, so you won't be writing from scratch by the time you begin working on these reports.

Plan for your time prewriting, outlining, developing, and printing the concept across the technologies by keeping a production log outlining the time spent working on this project (see Production Log).

As part of progress and final reports, you will need to account for your learning and time with this project, including submitting the production logs and discussing the labor involved in this project.

For some, this project may exacerbate existing anxieties with working with technologies, especially with a lack of familiarity associated with different composing modalities. Don't exacerbate problems by getting frustrated—instead, use these opportunities to problem solve and learn from these experiences (See Benefits of Saying Flexible and Experimental)

Use prewriting, planning, outlining, drawing to think through the concept that you will translate using FabLab materials. This project should enhance your creativity—as a key concept of this project.

Make sure that you spend time with FabLab staff members to learn the software needed to create the materials for this assignment

—Read the documentation and help files for the software that you use in the FabLab

—Consider working in pairs to help each other learn the software

Schedule more time than you think is necessary to learn the software and produce the materials—it will take much longer to plan, develop, learn, and create with the technology in the FabLab then just writing an alphabetic print essay.

Make sure to save your work

—Save your electronic files from the software you use in the FabLab to DropBox, to your university provided backup space, or some other cloud-based provider (You can lose flash drives and hard drives can crash).

Benefits of Staying Flexible and Experimental	
Build confidence	**Focus on rhetoric:** Use rhetorical principles (logos, pathos, ethos) to develop the materials for this project. **Focus on rhetorical analysis:** Use rhetorical analysis (audience, purpose, organization, arrangement, form) to structure your analysis of the FabLab materials.
Solve compatibility issues early	**Memo expertise:** In your learning log, you may want to write about your experiences with and knowledge of digital technologies. **Software usage:** Make sure the software files you use to produce materials with the hardware in the FabLab are compatible before printing.
Invite and value creativity	**Be creative:** Identify an area of rhetoric, writing, or literacy that you'd like to explore in a creative fashion for this project **Peer review:** Talk to your peers about your projects, see what others are doing with their projects, ask questions, make suggestions for improvement
Maintain cool in the face of technological problems	**Take a deep breath:** It's amazing how often taking a deep breath can allow people to work through technology problems. **Identity problem-solving protocols:** Learn how to identity problem-solving as part of this project **Work respectfully with FabLab staff:** Consult the FabLab staff several times (not just one visit) before and during this project. Ask for specific support

These are some general guiding principles to keep in mind while working on this project. For some, this project will unleash creativity. For others, the anxiety of working with new technologies will be overwhelming. And, for a few, the notion of having an experimental project that expands thinking about rhetoric and writing will be confusing.

It's important that you document your thoughts and feelings, along with your time, throughout this project because when you complete the final report, a portion of that report will be about an analysis of your role in this process.

Technology Learning Log	
	Keep a technology learning record of your experiences with the FabLab and the new piece of technology. Answer such questions as:
Purpose	For what purpose did you use this technology?
Affordances	What are the particular affordances (the special capabilities) of this technology?
Learning	How did you learn to use this technology (e.g., relied on the manual, had a friend help you, figured it out yourself, used the help files online, went to a demonstration?
Problems	With what aspects did you have problems?
Like	What characteristics/functions do you like?
Dislike	What characteristics/functions do you dislike?
Tasks	Were there any tasks that were needlessly complicated? What tricks did you discover?
Completion	What project did you complete?
Advice	Is there any advice you can offer new people?

Using your own methods for recording your thoughts and feelings, you may want to use these prompts from this learning log as a guide (a heuristic) for thinking through how you are processing working with new technologies in relation to the course and project learning outcomes.

The production log will help you keep track of your progress with this project. Below is just a "sample" of the progress you would want to keep in your log (date, time spent, and description).

Production Log	
Sample	9/21/16—Went to the FabLab for the demonstration as part of class. .5 hours
9/26/16	Worked on sketching out ideas .5 hour
10/1/16	Made some additional notes on the ideas. 1 hour
10/2/16	Organized ideas into additional sketches and notes. 2 hours

The log is just a space to document progress (date, hours spent on project), not necessarily a space to document thoughts or feelings about the project (use a journal for those comments).

Website listing of resources for this project

FabLab

UTA FabLab: http://fablab.uta.edu

MIT FabLab: http://fab.cba.mit.edu

FabLab Foundation: http://www.fabfoundation.org/fab-labs/

FabLab Ted Talk: http://www.ted.com/talks/neil_gershenfeld_on_fab_labs

FabLab Essay: http://cba.mit.edu/docs/papers/12.09.FA.pdf

FabLab Charter: http://fab.cba.mit.edu/about/charter/

3D Printing

Thingverse: https://www.thingiverse.com

Local 3D Printing: https://www.3dhubs.com

LulzBot: https://www.lulzbot.com/community

How to Write an Abstract:

These links couch writing an abstract with writing research papers, but there's good content nonetheless to consider.

https://users.ece.cmu.edu/~koopman/essays/abstract.html

http://writingcenter.unlv.edu/writing/abstract.html

https://www.winthrop.edu/uploadedFiles/cas/english/AbstractTips.pdf

Final note: Portions of this assignment sheet either directly come from (technology learning log and benefits of staying flexible) or are inspired by, or integrate content in editor Cynthia Selfe's *Multimodal Composition* (2008)