Designing for Greenfab
H79.2872.1, 2-credit internship
Assorted Mondays, in rm 442 @ ITP and @ Greenfab
Directions from ITP to GreenFab 841 Barretto St, Bronx NY

Facilitators
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Office hours
By appointment

Class Calendar Google Calendar

Description
During the course of this two credit internship, ITP students will develop, test, and teach workshops to the students of GreenFab, South Bronx, a hands on high school program that aims to teach science, technology, and engineering skills through coursework in both sustainable design and green technologies. ITP students will be asked to design small, creative, inexpensive, kit-able activities to be utilized in reinforcing GreenFab's core curriculum and mission. Topics of discussion will include the application of physical computing in regards to secondary education, creative uses of sustainable technologies, STEM (science, technology, engineering, and math) curriculum development, user testing, and open source hardware and software tools. During the semester seven meetings will be held both at ITP and at GreenFab's facilities in the South Bronx.

Grades: Grading will be based on the following: The completion of a workshop activity and the submission of accompanying curriculum, class attendance (both at ITP and Greenfab, especially important with so few class sessions), and participation during in class discussions and evaluations. In addition to time spent working together in class, students will be expected to work independently, 4-6 hours per week (standard for a 2 credit internship), in developing and refining their workshops and ideas.

Additionally, students will be expected to blog weekly about both their progress and experiences in relation to this internship.

Workshop Activity Guidelines and Accompanying Curriculum
You will work in small groups to develop and test a three-hour activity for the GreenFab students (activity should be designed for 15 - 30 students, depending on number of ITP groups). At the final meeting (11/29) groups must hand in a final curriculum document that includes:

- Activity Objectives / Skills Learned
  - What are the goals of the activity?
  - What are they supposed to be learning?
- Complete List of Materials and Tools Needed
  - Everything needed for activity, including recommendations for future parts and materials sourcing
- Recommended Classroom Setup
  - For students (Up to 15 - 30 students) and teacher
- Supporting Resources
  - Websites
  - Illustrations
  - Examples
- Introduction Questions
  - How should the teacher introduce the activity?
- Full Activity Description
  - Step by step directions
- Closing Discussion
  - How should the teacher close the activity?

**Other Final Assignment Guidelines**
- Curriculum document should be *written for teachers, not students*
- Must include detailed instructions and documentation
- Total cost should not exceed $10.00 per student (compounded for group activities)
- Should allow for individual creativity/exploration of the topic presented

**10/20) CLASS 1 @ ITP:**
- Class overview & personal introductions
- All about Greenfab
- ITP and Greenfab (where you come in)
- Workshop expectations
- Greenfab’s resources and examples of the current curriculum
- In class activity: Evaluating GRL’s [LED Throwie Tutorial](#)

**CLASS 1 ASSIGNMENT: Tutorial Evaluation/Expansion**
*(BLOG BY CLASS 2, 9/27, AND PRESENT IN CLASS 3 ON 10/18)*:
*Using a resource such as instructables.com, MAKE online, Arduino.cc, Sketchup.google.com, www.inkscape.org, or Processing.com, find a tutorial that interests you, and do it. Make something hardware or software based to present in class in two weeks while documenting the entire process. Evaluate the author’s writing style, the quality of instruction, and the tutorials final outcome. Discuss how the tutorial and final product could be improved/expanded upon...What would you do differently?*

**10/20) CLASS 2 @ Greenfab:**
- Directions from ITP to GreenFab [841 Barretto St, Bronx NY](#)
- Orientation at Greenfab at 1:15 (Leave ITP 12:30):
  - Meet the kids, tour the facilities, and participate in Greenfab’s student orientation.

**CLASS 2 ASSIGNMENT: Experiences at Greenfab/Workshop Ideas**
*(BLOG BY CLASS 3, 10/18, AND PRESENT YOUR WORKSHOP IDEAS IN CLASS 3 ON 10/18)*: Blog about your experiences while at Greenfab. Start
brainstorming/prototyping ideas for your workshop. Include a rough materials list and cost outline.

(10/18) CLASS 3 @ ITP:
Present your Tutorial Evaluation/Expansion Assignment from class one, and outline your workshop ideas. Workshop topics will be discussed and evaluated by the class as a whole. Present a preliminary parts/materials list.

CLASS 3 ASSIGNMENT: Teach in 20 (DUE BY CLASS 4, 10/25):
Teach one aspect/section of your proposed workshop in 20 minutes. Present both instructions and a live demo of your activity (you will be evaluated in class on your teaching style, clarity of instruction, overall organization, etc.) Make sure to fully complete your lesson within the 20 minute time frame! Be sure to blog about your process.

(10/25) CLASS 4 @ ITP:
Present your Teach in 20 with class feedback. Finalize dates for workshop presentations at Greenfab.

CLASS 4 ASSIGNMENT: FULLY DEVELOP AND USER TEST YOUR WORKSHOP (BLOG AND PRESENT BY CLASS 5, 11/8) Expand upon your activity instructions and finalize your curriculum and parts list. Before class 5, perform initial user tests of your workshop, with non-ITP students, if possible. Blog about your experiences.

(11/8) CLASS 5 @ ITP:
Present and discuss user testing results and the strengths and weaknesses of your proposed curriculum. Utilize the resources/collective brain power of the class in putting the finishing touches on your activity.

CLASS 5 ASSIGNMENT: FINAL WORKSHOP PREPARATIONS!!! Put the final touches on your curriculum, and prep your materials. Get ready to teach!

(Either 11/15 or 11/22) TEACH YOUR WORKSHOP @ Greenfab
Be sure to fully document the process, and end results, in whatever way that you deem appropriate.

FINAL ASSIGNMENT (PRESENT DURING CLASS 7, 11/29): Utilizing the materials that you’ve developed, as well as the documentation of your activity, prepare a 15-20 minute final presentation about the curriculum that you’ve developed and the work that you’ve accomplished. Be sure to discuss both the strengths and weaknesses of your activity, as well as possible improvements.

(11/29) FINAL PRESENTATIONS @ ITP:
Final presentations, and feedback from guests.