

Course Number:	CS 8803-PP
Course Title:	Physical Prototyping in HCI
Time and place:	TTR 9:30am – 10:45am Room: Architecture West 358 Aug 21 – Dec 4
FINAL:	Thursday, Dec 13 11:20 AM - 2:10 PM
Instructor:	Noah Posner
Credit Value:	3 credit hours
Office Hours:	TBA or by appointment in EDB second floor 217I (Through the glass doors and go left, see video on Canvas)

Catalogue Description:

This course aims to expose and provide students with hands on experience with the tools and techniques needed to create 3D physical product design and interaction prototypes. Students will progress through the model making process gaining experience and exposure to traditional model making techniques, rapid prototyping technologies, and an understanding of where and when it fits into the design process. Students will also learn methods for incorporating interactive elements and hardware into physical models to allow for testing.

Learning Objectives :

Upon completion of the course students are expected to demonstrate knowledge, skill and abilities in the following areas:

- Communicate an idea visually in 2 and 3 dimensions.
 - Develop physical hand built models through an iterative process
 - Produce models using several rapid prototyping technologies
 - Produce evidence of documentation of the model making process
- Recommend the most effective type of model to communicate a desired concept
- Critique the work of yourself and others in a constructive manner
- Evaluate the Intended interaction and functionality of a design using a physical model
- Incorporate existing components into digital and physical models.
- Identify and Execute Craft, with a capital “C” (Craft: the level of quality executed during all steps of the process which is visual and process oriented)

Course Format:

Instructional methods for teaching the course include:

- Lecture and in-class discussions
- In class review (peer and external)
- In class demonstrations and workshop sessions

Skills Needed:

These tools will be used in this course but not taught in detail.

- Adobe Illustrator
- Sketching

Tools Needed:

These pieces of equipment will be used in this course and are not provided by facilities.

- X acto knife
- Blades
- Cutting mat
- Ruler
- Nice pen to draw with
- Sharpie
- Flash drive
- Calipers
- Circuit Playground (1 per pair)
- Camera (phone is fine)

General Responsibilities and Expectations:

Attendance:

Students are expected to attend and participate during each class. Attendance will be recorded and factor into the student's grade. If you know that you will miss class, please inform your instructor at least 24 hours in advance. If an unexpected situation occurs, it is your responsibility to contact the instructor within 24 hours of the scheduled class time. Any graded assignments missed due to an unexcused absence will be graded as a zero. Students will have an opportunity to make up assignments for excused absences after discussion with the instructor. Absences may be excused at the instructor's discretion, but in any case will require written excuse from a Dr.s office, other instructor, coach, Dean of Students, etc.

Participation:

Students are expected to be highly active and engaged in all in class discussions and activities. Participation will be recorded and factor into the student's grade. Students are encouraged to provide constructive criticism and feedback to their peers both inside and outside of class and be an active member of the design community. Participation points can be awarded for activities outside of class.

Deadlines:

Students are expected to complete any assigned readings, videos, or assignments and come prepared to each class. Deadlines for all assignments and projects will be specified when they are given. There will be no late turn in of assignments unless specifically approved. In-class activities may only be made up if you are absent for a valid reason. The instructor reserves the right to change the dates and modify assignments as necessary, with advanced notification. Students will submit the vast majority of assignments in class, in person.

Lab Policies:

Much of this class will take place in lab and shop environments. During that time students will follow the dress code and policies of those space. This course will make use of support facilities such as the COA Design Shop, computing lab, Laser Cutters, 3D print lab, and other resources. The College of Architecture Design Shop (basement east building) and laser-cutters (third floor east building) are available to support design activities. Students wishing to use the facility and equipment must have completed the required orientation and /or have been checked out in the proper use of the equipment by lab personnel. Failure to adhere to these policies will result in failure of this course.

Evaluation Criteria:

Projects and assignments will be evaluated based on relevance to assignment criteria. Each project will have a certain number of points available which are allocated to different criteria.

Grading:

Grading will be based on the Georgia Institute of Technology system. No plus or minuses will be applied to the final grade. Each project will contain a certain number of points. A student's final grade will be determined from the points they earn out of the total possible points. Students will have one week after each project grade submissions to discuss any grading matters with the instructor. The grade ranges are defined as follows:

90-100% = A

80-89% = B

70-79% = C

60-69% = D

0-59% = F

Grades will be based according to the following grading distribution:

Grading Distribution:

Project 1	14 (2.7%)	Knife Skills and Craft
Project 2	70 (13.5%)	Iteration in foam
Project 3	80 (15.4%)	Introduction to CAD
Project 4	150 (28.9%)	Interactive Model in Cardboard
Project 5	180 (34.7%)	Incorporating Components & 3D printing
Participation	25 (4.8%)	discussions, attendance, cool thing of the day

Online Resources (Canvas):

The course will utilize Canvas (<https://gatech.instructure.com/>) for the distribution of class materials (such as lecture slides or supplemental readings), announcements, calendar/schedule, and for turning in class assignments. Slack will also be used for general questions and communication. It will also make use of a variety of websites such as YouTube.

General Notes (policies and procedures):

Special Needs:

All students with special needs, permanent or temporary disabilities are urged to contact their instructor or academic advisor for information or assistance to coordinate their service needs and/or visit the ADAPTS program website: <http://www.adapts.gatech.edu/>

Contacting the Instructor for an Appointment:

If you would like to arrange a meeting or appointment, please speak with the instructor after class, while wandering around campus, on slack, contact the instructor via email (noah.posner@design.gatech.edu). Please allow 24 hours for a response, perhaps longer on weekends.

This syllabus may be subject to change during the course of the semester. If so, the syllabus will be updated online and you will be informed of the changes.