Massachusetts Institute of Technology (MIT)
Department of Electrical Engineering and Computer Science
6.811: Principles and Practice of Assistive Technology (PPAT), Fall 2014

Lectures: Mondays and Wednesdays, 1PM-2PM, 32-144
Labs: Mondays and Wednesdays, 3PM-5PM, 32-044
Office Hours: As posted on the website, or by appointment via ppat@csail.mit.edu
Website: http://courses.csail.mit.edu/PPAT
Stellar: http://stellar.mit.edu/S/course/6/fa14/6.811

Course Staff
For the fastest response, use the PPAT Piazza site or email us at **ppat@csail.mit.edu**.

Instructors
Grace Teo, graceslt@mit.edu, Office: 32-331
William Li, wli@csail.mit.edu, Office: 32-337
Rob Miller, rcm@mit.edu, Office: 32-G718

Teaching and Laboratory Assistants
Michelle Chen, mwchen@mit.edu
Ishwarya Ananthabhotla, ishwarya@mit.edu
Abigail Klein, kleinab@mit.edu

About the Course
Principles and Practice of Assistive Technology (PPAT) is a 12-unit, interdisciplinary, project-based course in which small teams of students work closely with a person with a disability in the Cambridge area to develop a practical product or solution that helps them live more independently. During the term, each team meets with its "client," iterates through multiple prototypes, and learns about the complexities of designing assistive technology (AT) for people with disabilities. The course also includes lectures on principles of successful AT design, perspectives from people with disabilities and AT makers and users, design processes and human factors, and social, economic, and ethical perspectives on disability.

PPAT was founded, taught, and championed by Professor Seth Teller, who conceived of the course and taught PPAT in 2011, 2012, and 2013. We are very proud to be offering PPAT once again in Fall 2014.

Goals of PPAT
1. Understand principles and complexities of assistive technology desgin and engineering.
2. Learn challenges and realities of people with disabilities and become equipped as an advocate.
3. Gain experience managing a team-based design/engineering project and working with a real client.

Prerequisites

There are no formal prerequisites for the course. We seek students from a wide range of backgrounds and disciplines. Experience in design is helpful, but not necessary. Teams of three to four students will complement each other's skill sets. Many of the students are in Courses 2 and 6, but students from all majors are welcome. This course is a good fit for students interested in public service, user-centered product design, working closely with a client with a disability (potentially in consultation with their caregivers and/or clinicians), and tackling difficult, real-world problems.

Course Components

The **lectures and labs** involve hands-on activities, discussions, and occasional guest speakers with experience in assistive technology and disability. Some of the lab periods will provide time for teams to discuss and work on their projects with technical mentors. Attendance and active participation in all in-class activities are required.

The **client project** is a central part of the course. Descriptions of potential projects and clients will be presented in the second week of class, and matches will be announced in the third week. Teams will meet weekly with their client to understand their needs, define a problem that can be solved with assistive technology, develop evaluation metrics, and test multiple iterations of prototypes. The client meetings, design work, and documentation represent the majority of work required outside of class. Deliverables for the project include a written contextual inquiry report, a video documenting the client's challenge or the design process, midterm and final presentations, and

Each student will write a few individual **blog-style reflections**. We expect that you will think critically about the material and activities in PPAT, write about disability from your own perspective, attend other events and happenings around Cambridge and Boston related to disability, or learn more your client's life experiences. We will share many of these posts on the PPAT class blog. Some posts may be private, but we encourage you to make the majority of posts public so that the world can learn about your work in the course.

Grading

Assignment	%
4 blog posts	10%
Video documenting either (i) client challenge or (ii) design process	10%
Mid-semester presentations	10%
Final-semester presentations	10%
Online, open-source documentation & press release (+ high quality photos)	20%
Attendance, discussion participation, lab check-ins (i.e. mentor feedback)	20%
Client and peer feedback	20%
TOTAL	100%

PPAT Policy:

How to ask grading questions. Giving and getting grades is rarely fun, for anybody involved, and can impede the learning process by putting focus on numbers rather than on ideas, and by distorting the relationship between teacher and learner. Although we seek to grade this class rigorously, as you expect from an MIT class, we don't want to spend class time talking about grades, and we don't want grading issues to interfere with your relationship with your TA. As a result, **questions about grades may only be asked in person, at a lecturer's office hours**. TAs are not empowered to discuss or resolve grading questions. Grading questions asked on Piazza or by email will be summarily referred to a lecturer's office hours.

Tentative Schedule

Week	Date	Type	Title	Project Progress
1	9/3/2014	Lecture	Course introduction (case study of previous projects)	
		Lab	Communicating with (and about) people with disabilities	Clients invited to discuss communication/etiquette
2	9/8/2014	Lecture	AT user sharing (Steve Saling and Jack Geilfuss, Leonard Florence Center/ALS Residence Initiative)	
		Lab	AT showcase (low-tech to high-tech)	Clients invited to come and showcase their AT
	9/10/2014	Lecture	Ethnographic techniques (Lynde Lutzow, RISD/MassArt)	
		Lab	1h: Contextual inquiry, 1h: Client matching	Fill out matches
3	9/15/2014	Lecture	Client/mentor announcements	Team Formation & Project Matching, set up first meeting with client
		Lab	Project documentation using photos & film, client confidentiality	
	9/17/2014	Lecture	Ethics (COUHES at home)	
		Lab	Lab check in 1: Planning for client meeting with mentor: do background research on disability; discuss confidentiality, video documentation; discuss team roles; prepare questions and plan for contextual inquiry	
4	9/22/2014	Lecture	Responding to changing needs (Don Fredette, The Boston Home)	Client meeting 1: Understand challenge, contextual inquiry
		Lab	Wheelchair Lab	
	9/24/2014	Lecture	Discussion of Wheelchair Lab	
		Lab	Lab check in 2: Present client challenges, results of contextual inquiry to each other	
5	9/29/2014	Lecture	How OTs/PTs think (Kevin Berner, Easter Seals/BU)	Client meeting 2: Discuss solutions to challenge, more contextual inquiry, present some prototypes/sketches and discuss feasibility
		Lab	CANCELLED - Seth Teller Memorial Service	

	10/1/2014	Lecture	Physiology and pathology	
		Lab	Lab check-in 3: Come up with prototypes/sketches, confirm project focus, decide if any trainings are required	
6	10/6/2014	Lecture	Work on design/prototype; team-specific optional training	Client meeting 3: Present project focus, present concept for prototype 1, define success metrics together
		Lab	Work on design/prototype; team-specific optional training	
	10/8/2014	Lecture	Public lecture on assistive technology design and identity (Sara Hendren, Olin College/Ablerism)	
		Lab	Lab check-in 4: Present project focus, concept for prototype 1, success metrics. Brief students on mid-semester panels	
7	10/13/2014	Lecture	CANCELLED (COLUMBUS DAY)	Client meeting 4: Test prototype 1 with client, evaluate according to success metrics, refine success metrics and/or prototype 1
		Lab	CANCELLED (COLUMBUS DAY)	
	10/15/2014	Lecture	AT for Vision Impairments (Amy Ruell, Visually Impaired and Blind User Group (VIBUG))	
		Lab	Lab check-in 5: Discuss results of prototype 1 testing, & Electronic Device Access 1 (hardware) Lab	
8	10/20/2014	Lecture	CANCELLED (Work on presentations)	Clients invited to mid-semester panels
		Lab	Mid-semester Panels	
	10/22/2014	Lecture	CANCELLED (Work on presentations)	
		Lab	Mid-semester Panels	
9	10/27/2014	Lecture	Web/software accessibility	Client meeting 5: Share feedback from class with client, refine prototype 1
		Lab	Electronic Device Access 2 (hardware & software)	
	10/29/2014	Lecture	Discuss Electronic Device Access Labs	

		Lab	Lab check-in 6: Brief students for final report/presentations/instructables, team updates, make prototype 2	
10	11/3/2014	Lecture	Where is innovation happening? How are AT solutions being shared	Client meeting 6: Test prototype 2, evaluate according to success metrics
		Lab	Work on prototype 2	
	11/5/2014	Lecture	Panel on experiences with invisible disability	
		Lab	Lab check-in 7: Discussion on panel, Team updates	
11	11/10/2014	Lecture	CANCELLED (VETERANS DAY)	Client meeting 7: Refine prototype 2
		Lab	CANCELLED (VETERANS DAY)	
	11/12/2014	Lecture	Public engagement with projects: How we portray clients/disability in our press releases, study different ways disability is portrayed in media	
		Lab	Lab check-in 8: Public engagement with projects (cont'd), Team updates	
12	11/17/2014	Lecture	Assistive technology and the law	Client meeting 8: Deliver 3rd and final prototype
		Lab	Panel of entrepreneurs/work on projects	
	11/19/2014	Lecture	Socioeconomic issues in assistive technology and disability	
		Lab	Lab check-in 9: Discuss socioeconomic/legal issues related to clients, team updates	
13	11/24/2014	Lecture	Wearable computing OR Workshop on making eye tracking devices 'wearable'	Client meeting 9: Final feedback from client
		Lab	Work on final presentation/press release/instructables	
	11/26/2014	Lecture	Aesthetics in assistive technology	
		Lab	Lab check-in 10: Discuss final feedback & continuation of projects after semester, work on final presentations/press release/instructables	
14	12/1/2014	Lecture	End-of-semester Presentations	Clients invited to final-semester panels

		Lab	End-of-semester Booths	
	12/3/2014	Lecture	End-of-semester Presentations	
		Lab	End-of-semester Booths	
15	12/8/2014	Lecture	CANCELLED	
		Lab	Follow up opportunities	
	12/10/2014	Lecture	CANCELLED	
		Lab	Lab check-in 11: Discuss continuation of projects after semester, course summary, party	