In this course we will explore the psychological dimension of technology:

1. What is the interplay between humans and products of design?
2. What factors make products pleasurable and usable, or unusable and terrible?
3. How is design integrated into everything around us, and how does that influence the way we work and think?
4. What is it about the people who create technologies that leads to how it is designed, and how does that influence us?

1 Requirements
   Grading will be based on class participation, reaction notes, and class projects
   Late assignments will be marked down one notch per day: e.g. a 2 becomes a 1 …
   - Class participation: 20%
   - Weekly reaction papers: 50%
     Reaction papers will be graded on the following scale:
     o Not done, incomplete, or ‘phoned it in’ = 0
     o Acceptable = 1
     o Awesome = 2
   - Projects: 30% (TBD)
   - If you are taking Press Play (EE47) the project requirements will be different, and related to your projects for EE47

2 Reaction Papers
   Every week you will have to write a 1-3 page response on the readings and class discussion. What is interesting? What do you agree with, what do you disagree with? Are the readings in support of each other, or do they conflict? Exactly what you say is up to you, but you will be graded on engagement with the readings and class discussion and how interesting the readings response is. Taking the assigned readings and discussion topics and going deeper into the material, or taking it as a springboard and off into a new direction is highly encouraged—the goal is to inspire creative and deep thought.
   The reaction paper is due Friday at 5pm.

3 Highbrow movie night (HMN)
   One of the great ways to explore the understanding of technology is to see how it’s portrayed in media. Optional movie nights will be organized to watch some selected films:
- Objectified
- 2001: A Space Odyssey (Kubrick’s masterpiece)
- THX-1138 (George Lucas’ first feature film)
- Metropolis (the 1926 genuine original)
- The Matrix (how do you know you’re not inside?)
- Her
- Kara (the short graphics demo)
- The Machine (if available)
- Connecting (Microsoft’s feature), A day of Glass (Corning)
- The mother of all demos (Douglas Engelbart introduces the GUI and mouse)
- How they couldn’t have faked the moon landing

4 Instructor and Office Hours
   Instructor: Dave Miller – Davebmiller@stanford.edu
   Office hours: Monday 2-4 pm or by appointment

5 Required materials
   All of the required materials will be posted on Coursework, or links will be provided.

6 Research Participation
   Stanford is one of the world’s preeminent research institutions. You can be a participant in sponsored research, and receive extra credit in this course. It is a valuable experience to be a part of research studies, and some of them can be really cool—unlocking the secrets of the mind, determining how new cars or products should be designed, or how people work together. More information will be provided in class on experiments and signing up.

7 Honor Code
   The Stanford Honor Code is important to me, and should be important to you. Good practices in scholarship form a core for good research practice and good academic citizenship. Violations of the honor code will be referred to the administration.

   http://studentaffairs.stanford.edu/communitystandards/policy/honor-code

8 Students with disabilities
   Students who have a disability which may necessitate an academic accommodation or the use of auxiliary aids and services in a class, must initiate the request with the Student Disability Resource Center (SDRC), located within the Office of Accessible Education (OAE). The SDRC will evaluate the request with required documentation, recommend appropriate accommodations, and prepare a verification letter dated in the current academic term in which the request is being made. Please contact the SDRC as soon as possible; timely notice is needed to arrange for appropriate accommodations. The Office of Accessible Education is located at 563 Salvatierra Walk (phone: 723-1066; TDD: 725-1067).
Lecture topics and readings

Please read the readings before the class indicated, to be prepared for discussion. Every week you must write up a reaction to the readings and class discussion.

1 What do you mean, Psychology of Technology?
What is technology? What is the relationship between producers, technology, and users?
1.1 In class: Watch Powers of Ten, get a scale of the universe
1.2 Discussion: what is technology? What is psychology? How do these fit together
1.3 No readings for today

2 Spelunking Plato’s Cave
An introduction to how your brain works, how your senses work, and what that means for us exploring psychology and design


3 Background on interfaces
Affordances, signifiers, control, interaction

4 The Shape of Things to Come
4.1 Sterling, Bruce (2005) Shaping Things

5 Mental Models

6 Are you in there?
6.2 The philosophy of Her: http://nyti.ms/1ddKOXH

7 Quality and Aesthetics
7.1 Introduction and selections from Super Normal.
7.2 Selection from Zen and the Art of Motorcycle Maintenance
7.4 Dieter Rams’ Ten principles of Design: https://www.vitsoe.com/us/about/good-design

8 Interfaces and Culture

9 Humans and human-like computing

10 Ubiquitous, ambient, and persuasive computing

11 Social responses to communicative technologies

12 Macro-scale HCI

13 Research methods: the qualia and the Quanta
13.1 Ethnographic research: Intel’s Sharp-Eyed Social Scientist http://nyti.ms/1fpysn
13.3 Reading on quantitative usability analysis TBA

14 In Defense of the Analog
14.2 Errors: quantizing and sampling
14.4 Tubes vs. transistors:
    http://www.theaudioarchive.com/TAA_Resources_Tubes_versus_Solid_State.htm
14.5 Perception of sound and light

15 Production and Consumption
15.1 Clay Shirky: Cognitive Surplus – how do technology products determine whether we produce or consume (TBD)