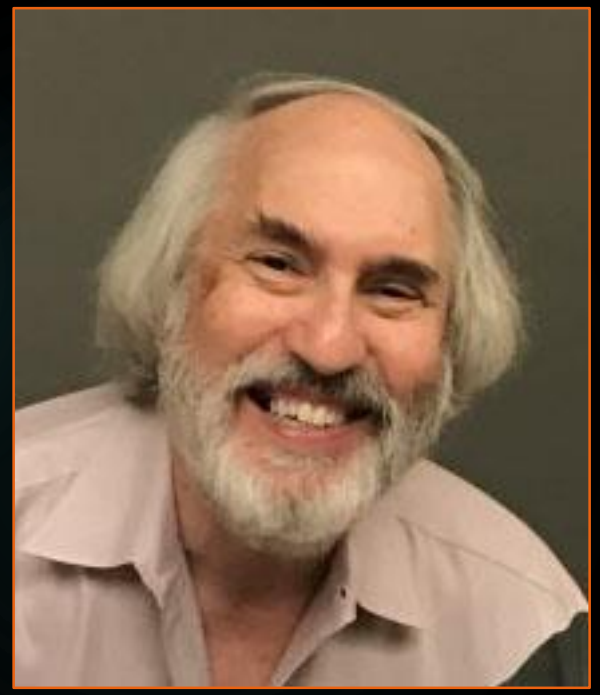
January 26, 2023

The Design and Control of Exoskeletons for Rehabilitation

ENGR110/210
Perspectives in Assistive Technology



David L. Jaffe, MS

Instructor

17

Years

CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!

Submitted by
Marlo Kohn

Questions?

Please notify me of your comments, suggestions, and concerns so I can explain / address / correct them.

Warden David Jaffe

Stanford Prison Experiment - 1971

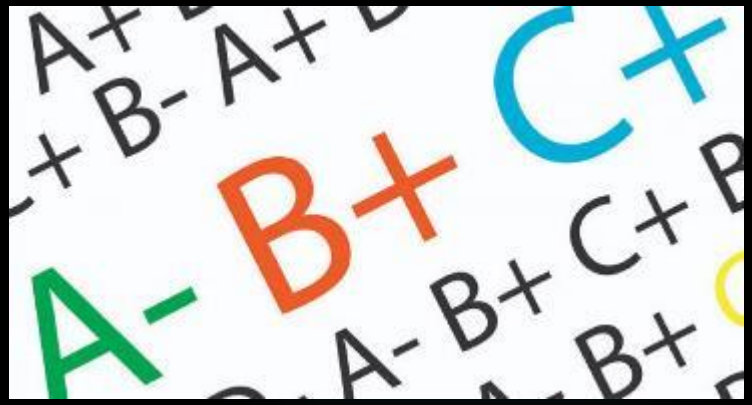
- Simulation of a prison environment - guards & prisoners
- Guards were urged to act aggressively
- Guards became increasing brutal
- Psychological abuse
- One of the most "unethical psychological experiments in history"
- Unscientific and fraudulent

Reminder - Work with Diligence

- Time is your team's most precious resource
- 2.5 weeks of class until Mid-term Presentations - Tue, Feb 14th

Grading - Team Projects

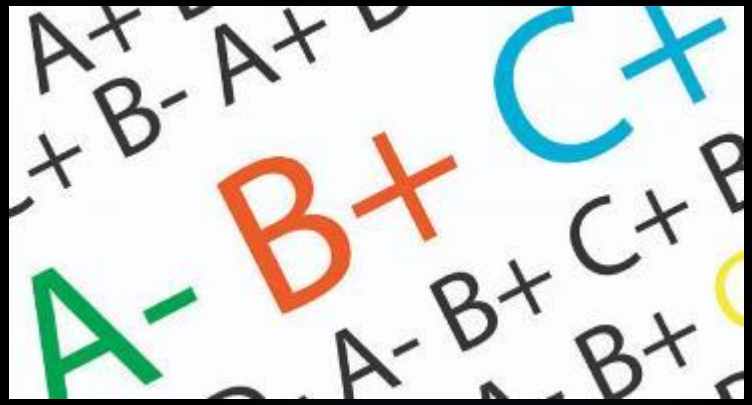
Deliverable	%
Mid-term Presentation	10
Mid-term Report	10
End-of-term Presentation	20
End-of-term Report	20
Prototype Design & Functionality	20
Individual Reflection	10
Participation	10



Participation includes attending class sessions, meeting with instructor, actively listening, posing questions to the guest speakers and the course instructor, engaging in class discussions, verbalizing thoughts and analyses, and submitting Weekly Project Reports or meeting with the course instructor.

Grading - Individual Projects

Deliverable	%
End-of-term Presentation	40
End-of-term Report	40
Individual Reflection	10
Participation	10



Participation includes attending class sessions, meeting with instructor, actively listening, posing questions to the guest speakers and the course instructor, engaging in class discussions, verbalizing thoughts and analyses, and submitting Weekly Project Reports or meeting with the course instructor.

Students working on fabrication projects
Activities for the remainder of the quarter

- Understand the Problem / Challenge
- Work as a team or individually
- Fabricate low-cost prototypes
- Discuss and demonstrate the prototypes to the project suggestor
- Receive and analyze their feedback and suggestions
- Redesign and fabricate a refined prototype
- Iterate the process until the end of the quarter
- Take photos
- Report your project progress as a team

Students working on non-fabrication projects
Activities for the remainder of the quarter

- Continue research on topic
- Interview additional people including clients
- Include your perspectives, draw conclusions
- Report your project progress

Persona

- The characterization of a typical / average person who represents the consumer group for a prototype being designed or a product being commercialized
- May not be a real person
- However, every person with a disability or older adult differs in their challenges, goals, preferences, and prejudices
- Consider products with versions, adjustability, ability to be customized, accessories, modularity, universally designed

Tuesday, January 31st

Bionic Ears: Cochlear Implants and the Future of Assistive Technology

Lindsey Dolch Felt, PhD

Stanford University

Program in Writing and Rhetoric

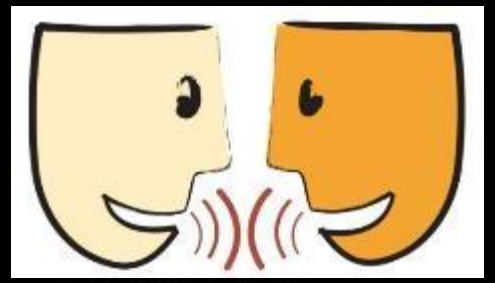
Today

The Design and Control of Exoskeletons for Rehabilitation

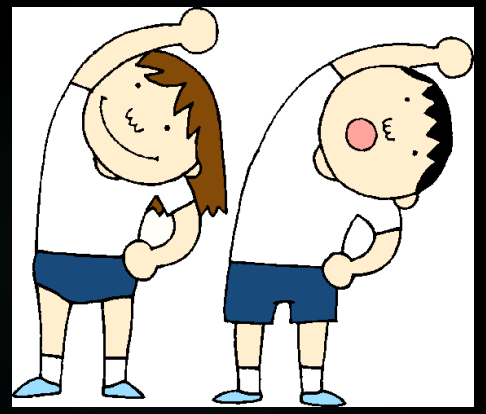
Katherine Strausser, PhD

Ekso Bionics - Technical Lead, Exoskeletons

Break Activities



- Sign Attendance Sheet
- Stand up and stretch
- Take a bio-break
- Text message
- Web-surf
- Respond to email
- Talk with classmates
- Reflect on what was presented in class



Short Break