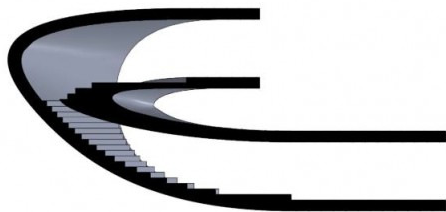# HDCC106

Section 0401
Introduction to Digital and Creativity II
(Users, Technology, and Design)

Would you live in a *Möbius House*?

SECTION A-A
SCALE 1 : 100

Users, Technology, Design

Much of the technology around us is designed for humans (*can you think of a technology not designed to be used by humans?*) and designed by humans (*any non-human examples for this?*) but how much of today's technology is designed "with humans" and what does that mean?

Why is design hard?

- The toy car has light and distance sensors.
- There is a hard-coded demo program (run when in demo mode).
- Users can insert an SD card with a program they wrote (run when in programmed mode).
- It has one button on the bottom. This button reports a short press or a long press.

Which type of button press should start the car in which mode?

Vehicle Design

What happens when you design a car that can go so fast and can change speeds so fast that the instruments on the dashboard can't keep up with the actual data?

What happens when you design a jet that has "relaxed stability" to the point that it cannot be flown without the computer(s) actively working?

What happens when you want to design a motorcycle for a blind driver?

What is HCI?

Human-Computer Interaction is a field that crosses many disciplines, which include:
- Computer science
- Information Systems
- Psychology
- Education
- Journalism
- Business
- English
- Engineering

Almost 200 years of punch cards

Starting in the 1830s, punch cards were used to program looms.

After that they were used to program organs and pianos to play themselves.

After that they were used to program electronic computer systems.

After that they were used to cause confusion and errors in elections!

Keyboards built to slow you down?

In the 1870s, the QWERTY keyboard layout was designed. Some say it was designed to slow down typing in a way that would avoid letters jamming.

In the 1930s, the Dvorak keyboard layout was designed and said to be faster / easier to use. It was also largely ignored.

What do keyboards look like today?

Pointing

Early 1900s: joystick (in an airplane)

Early 1950s: trackball, light pen

Early 1960s: mouse

Late 1960s: joystick (for video games)

Late 1960s / Early 1970s: touch screen

Late 1970s / Early 1980s: touch pads

Early 1980s: "trackpoint" joystick in keyboard

What about body as pointer? 1969 (Glow Flow) and 1999 (Text Rain) as precursors to Kinect? How close to just your hand and fingers in the air as pointers?

HCI / UIST / TED / reality

- **H**uman-**C**omputer **I**nteraction
- **U**ser **I**nterface **S**oftware and **T**echnology
- **T**echnology, **E**ntertainment, **D**esign

- Research -vs- Real Systems (proof of concept versus ready to use "out there")

Course Overview

Individual Readings Journal – shared via Google Docs with egolubUMD@gmail.com as a "word processing" document.

Class activities – you'll see…

Individual Work – homework assignments, exams.

Class Presentations / Report – Many tied to the semester project, but not all. We will be making use of **TED** (and **TED**-like talks) for one element of the semester for example.

Semester Project – Designing and prototyping based on a real project scenario.