MUSCLE: Expanded interactions between body and technology
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Wednesday 3:20-5:50 / room #

OVERVIEW
MUSCLE is a class that broadly explores the relationships between the body, movement and technology. Though conceptually focused, students will perform research-in-practice through movement exercises, weekly experiments that take the form of sketches, diagrams, videos, and conceptual prototypes. Students interested in digital performance, physical computing, computer vision and motion tracking will leave the class with a broad foundation in movement, conceptual methods and development for future projects and application.

Prior to the industrial revolution, the body was the primary tool for transforming the world. Over the past 150 years, the body's capacities and capabilities have been increasingly outsourced to machinery, appliances, and devices, and distilled to eyes, ears, and fingertips. This course examines the gap between the innate capacities of the body and what technology asks of it, in an attempt to uncover a broader spectrum of future possibilities.

The course will present the basics of movement from anatomical, historical and social perspectives, and survey different modalities and languages of movement. We will examine the history of movement in industrial design and the physical choreography of tools, and the history of physical interaction with digital technologies. We will engage with ideas of interface, affordance, body schema and choreography to marry movement, meaning, and device in new and experimental ways. This class is meant to be a beginning of expanded practices and new approaches to future relationships between the body and technology. We will end it with a beginning—a proposal for a future project.

OUTCOMES
- Develop an understanding of the systems that produce, influence and impact movement
- Gain experience with multiple movement modalities
- Experience alternative approaches to task, environment and technology
- Develop a proposal for a future project focused on expanded physical interaction.
- Produce a class bibliography and history of digital technology and the body

OUTLINE
Week 1 - Facets of Movement
Week 2 - History of technology and the body
Week 3 - Challenging paradigms
Week 4 - Alternate approaches
Week 5 - Future trajectories
Week 6 - Project idea reviews
Week 7 - Project presentations

GRADING
In-Class Participation 40%
Participation includes attendance, participating in class warm-ups, engagement with in-class exercises, asking questions and participating in class discussions
Weekly Assignments & blog 30%
Every week there will be an at-home assignment, as well as occasional readings. I would like for you to write a post each week that includes a response to that week’s class and any in-class activities, a response to any assigned readings, and your assignment. There will be a class blog for posting assignments and reflections.

Final Project 30%
Your final project will be a project proposal, complete with abstract, user narrative, precedents, sketches, diagram and related materials

DETAILED SYLLABUS BY WEEK
Week 1 - Facets of movement
This class will examine the systems that enable, influence, and impact movement. It will include an overview of biomechanics, skill acquisition, as well as cognitive (moving and thinking), subjective (H, M-P), emotional (Laban) and social dimensions (disability theory) of movement. We will also look at a spectrum of movement languages and discuss the differences between them.

In class: Experience with movement languages. Watch and learn from online videos (sign language, hip hop, hula, semaphore, karate)

Group assignment: Research and compile a recent history of the body and digital technology (1960s onward) in a 10-minute presentation that includes themes, an analysis of the range and types of actions embedded within (gestural interface, tangible interface, virtual & augmented reality, misc physical computing)

Reading: Paul Dourish, Where the Action Is, Chapter 1

Week 2 - History of the body and technology
This class will establish the lens of our exploration and unpack the idea of the paradox of modernity, examining anatomical evolution and the impacts of technological developments. It will include a historic overview of the body and technology, beginning with hunter-gatherers, and cover concepts of affordance and body schema, and how tools teach us to move.

In class: Groups will present histories of digital technologies and the body

Assignment: Track every piece of technology you use during the week, and the required physical interaction, consider the category of movement and type of movement. Keep a running list every day and post it on the blog.

Reading: Don Norman, The Design of Everyday Things, chapters 1 & 2

Week 3 - Challenging paradigms
With the biological and historic lenses of weeks one and two, we will begin to look at practices that challenge the current paradigms of interaction between body and technology. Alex Todaro will present work on experimental interface and tool creation, and choreography.

In class: turn objects into tools
Assignment: *Pick a familiar piece of technology and alter its choreography*

**Week 4 - Alternate approaches**
Week four will examine approaches to the body, task, tool and environment in other disciplines. We will look at seminal works in dance, sculpture, architecture and film.

In class: prototype a digital Franz Erhard Walther, an interactive experience that creates a specific and new relationship between two or more bodies, OR transform a current technological experience through the lens of a movement language from week 1.

Assignment: *Find a future prediction about the body or technology*
*Read excerpts from Speculative Everything and Hertzian Tales*

**Week 5 - Current & Future trajectories**
We will compile a list of visions for the near future, and begin to improvise scenarios. We will consider age, socio-economics, ability spectra, and cultural forces, as well as the current terrain of HCI and physical computing. We will consider the full range of movement capacities for the body, as well as current epidemics and issues, and brainstorm possibilities. We will also review the framework and components for the final project.

Assignment: *Bring final proposal ideas to class*

**Week 6 - Review final proposals and components**
Proposals will be reviewed in pairs, with recommendations shared out to the class for discussion.

**Week 7 - Final proposal presentations**
Final proposals should include an overview, project precedents and antecedents, a user scenario, a ‘paper’ prototype, video documentation of the prototype in use, and a project timeline for realization.