

# COMP210: Interfaces & Interaction

## 1: Human-Centred Design(HCI)

# Sign the Register

## Module Attendance:



Attendance

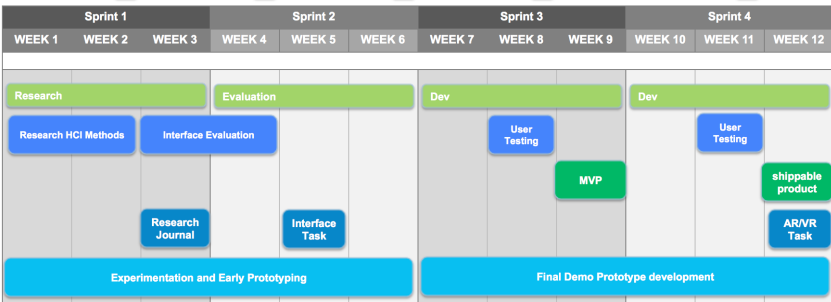
Figure: <http://learningspace.falmouth.ac.uk/course/view.php?id=1254&section=1>

# Module Roadmap

## COMP210 Interfaces & Interaction

### STUDY BLOCK 1

**STATUS KEY**  Sprint Goal  Waypoint  Dev Work  Assignment Deadline  Research



# Assignment Briefs

- ▶ **Produce** a journal detailing your research into HCI research
- ▶ **Evaluate** an existing screen-based game interface
- ▶ **Design** and **develop** an interface that incorporates either AR or VR

# Learning Outcomes

- ▶ Explain
- ▶ Discuss
- ▶ List

# Human-Computer Interaction

"If we didn't have people, everything would work so much better" Donald A. Norman

## what is HCI?

HCI is the study of the relationship between people and technology



Figure: [Cyborg Neil Harbisson](#) with his antenna implant

# A Little Bit of History

- ▶ Commonly understood that HCI formally acknowledged as a field of study in 1982
- ▶ driven by the shift from secure cool room computers to personal computer - Apple 2 IBM PC Commodore
- ▶ In essence, non-engineers having access to computers
- ▶ Early computers were pretty daunting to non-engineers
- ▶ HCI was born from the shift from specialist users to day-to-day use by non-engineers



# Ivan Sutherland



Figure: [Youtube link for Sketchpad demo](#) filmed in the early 60s

# More recently...

Early 90s HCI blew up as the internet and web went mainstream and there was an explosion of new interface and communication methods

## Other Notable Shifts:

Fixed computers<2004>portable devices

Authored content<2004>user generated content

# NOW

## Tech Buzzword Bingo!

- ▶ Mobile
- ▶ Multitouch
- ▶ Gestures and natural computing
- ▶ Sensors
- ▶ Embedded
- ▶ Wearables
- ▶ Sustainability
- ▶ Big Data
- ▶ Social computing
- ▶ Accessibility
- ▶ Mixed Reality

Lets begin with the principle that all artificial things are designed.

Who is doing the designing?

Lets begin with the principle that all artificial things are designed.

Who is doing the designing?

Are you doing any design?

# HCI - A Crash Course

## Do not...

- ▶ Presume prior knowledge of the audience
- ▶ Especially, if they are a similar demographic to you
- ▶ Expecting people to read the instructions
- ▶ Blaming the user for errors
- ▶ Getting frustrated with the user for unpredictable behaviour

# HCI is complex because...

- ▶ Borrow methods from other fields
- ▶ Create standards derived from other fields
- ▶ Involves Humans

If HCI is the study of the relationship between people and technology what fields might that span?



If HCI is the study of the relationship between people and technology what fields might that span?

- ▶ Computer Science (duh)
- ▶ Sociology
- ▶ Psychology
- ▶ Communication
- ▶ Human factors engineering
- ▶ Industrial engineering
- ▶ rehabilitation engineering
- ▶ and many more.

# HCI Research

*"HCI research requires both rigorous methods  
and relevance"*

*- Donald A. Norman*

# HCI Research

*"HCI research requires both rigorous methods  
and relevance"*

*- Donald A. Norman*

We use it to influence interface design, development process, user training, and public policy.

Generally, to improve our relationship with computers.

# What can be considered HCI contributions?

- ▶ Empirical
- ▶ Artefact
- ▶ Methodological
- ▶ Dataset
- ▶ Survey
- ▶ Opinion
- ▶ theoretical

We are mostly interested in empirical

# These are Exciting Times

- ▶ Tools are much better now
- ▶ Eye tracking, sensors (EMG EEG)
- ▶ Access to the masses - mechanical Turk, social networks, large amounts of generated content to analyse
- ▶ Automation - AI machine learning, neural networks