LUT
University

Introduction interaction design. What are UIs?

User Interfaces and Usability

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Interactive systems and interaction design

Interactive systems

People + **Technology**.

Interactive systems process information that people can perceive.

- Transmission ⟷
- Display ▭
- Storage ⬚
- Transformation of information ⬛▸

What is interaction design?

"Designing interactive products to <u>support</u> the way people <u>communicate</u> and <u>interact</u> in their **everyday** and **working** lives." Sharp, Rogers, and Preece (2019)

"The design of <u>spaces</u> for human <u>communication</u> and <u>interaction</u>." Winograd (1997)

Interaction design goals

?

Develop <u>usable</u> products.

Usability means <u>easy to learn</u>, <u>effective to use</u>, and provides an <u>enjoyable experience</u>. User Experience

➡️ Involve users in the design process.
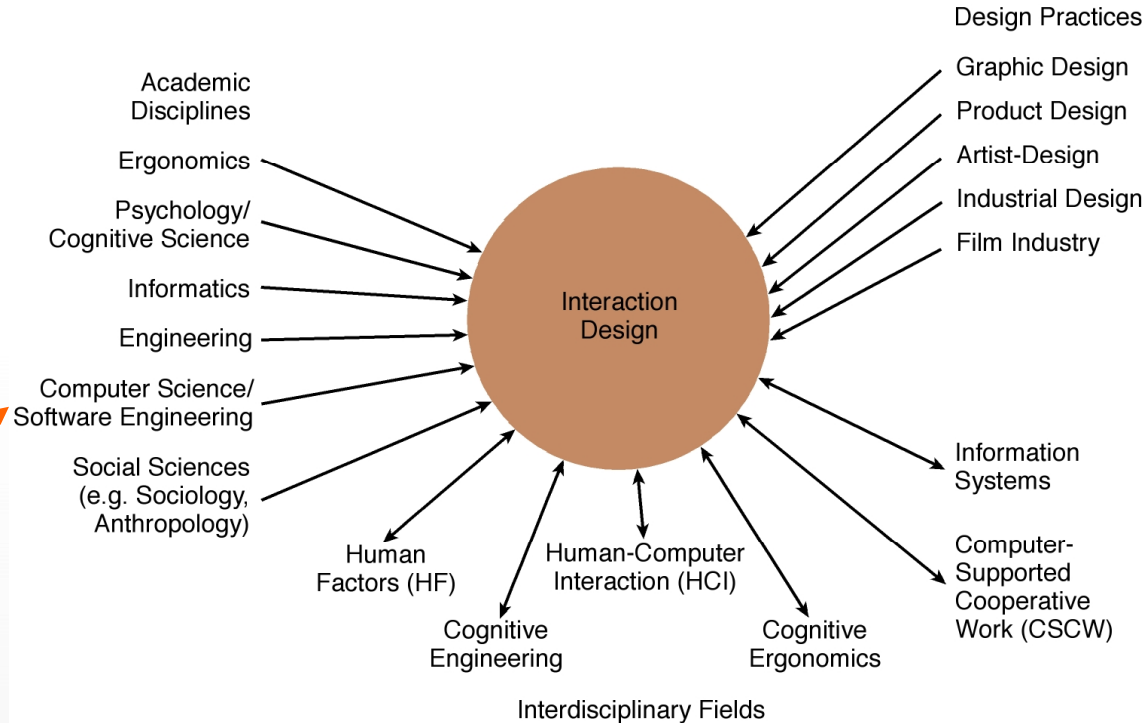
Core principles

Users should be <u>involved</u> throughout the development of the project.

Specific **usability** and **user experience** <u>goals</u> need to be <u>identified</u>, <u>clearly documented</u>, and <u>agreed</u> to at the beginning of the project.

Iteration is needed through the core activities.

Always design with and for the user

Interactive systems design – skills and participants

Most course participants are here

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Working in multidisciplinary teams

- Many people from <u>different backgrounds</u> involved
- Different <u>perspectives</u> and <u>ways of seeing</u> and <u>talking</u> about things

<u>Benefits</u>
- More ideas and designs generated

<u>Disadvantages</u>
- Difficult to communicate and progress forward the designs being created

User interfaces

User Interface: Definition

User Interface: Interface to any interactive system. Includes all components where <u>people</u> come into contact, <u>physically</u>, <u>perceptually</u>, and <u>conceptually</u>.

- **Physical**: Buttons, levers, force feedback, touch
- **Perceptual**: See, hear
- **Conceptual**: Thinking about the device (what it does and what to do with it)

User Interfaces: Examples

Figure 1.7 Various user interfaces: remote control; microwave; palmtop; and Xbox controller
(Source: (a) Fujitsu; (b) © D. Hurst/Alamy Images; (c) Gareth Boden/Pearson Education Ltd. (d) Microsoft Limited)

Source: Benyon

What's difficult about creating UIs?

Creating UIs ➡ Designing interactive systems

"What is design? It's where you stand with a foot in two worlds - the world of technology and the world of people and human purposes - and you try to bring the two together."

Mitch Kapor

If interactive systems were icebergs, the UI would be the visible part.

Engineering design <> design as craft <> artistic design

Interactive Systems: Things to be considered and skills required

- Understanding **P**eople (your users)
- Understanding the situation (**A**ctivities and **C**ontext)
- Understanding and mastering involved **T**echnologies

➡️ **PACT** framework (see Benyon)

Knowing how to apply relevant design techniques and practices.

It's a process

As software engineering is a process with <u>implementation being one of the last steps</u>, similarly creating UIs is the last steps of interactive system design process.
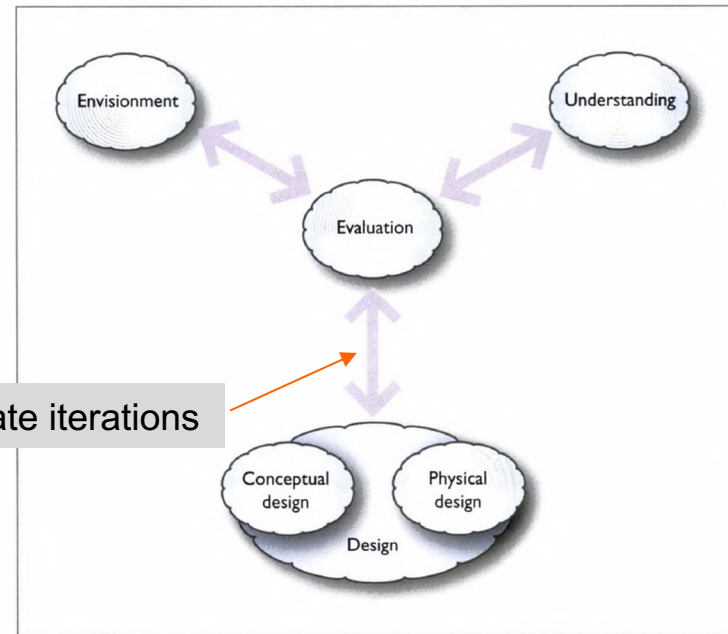

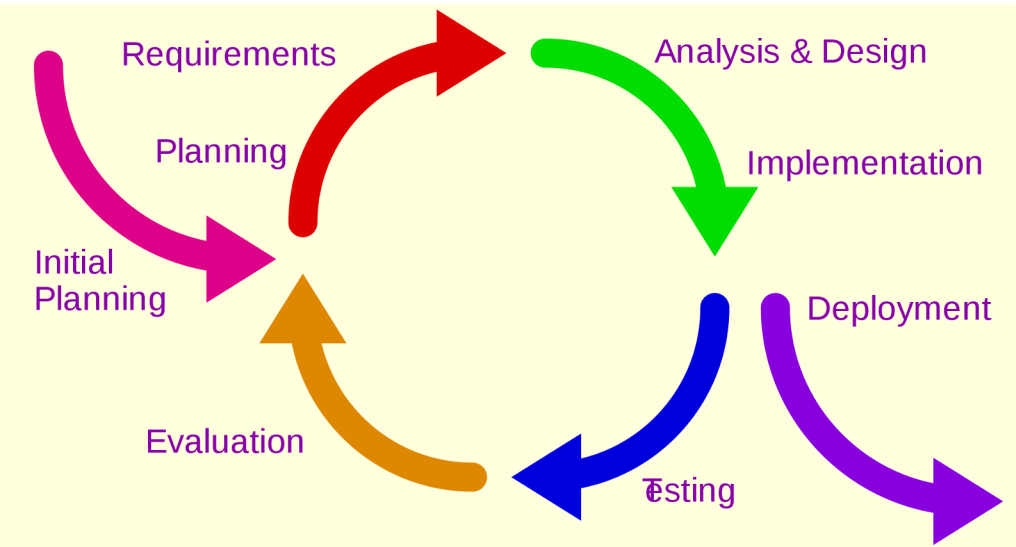Figure 3.1 Understanding, design, evaluation, envisionment

This usually indicate iterations

Compare: <u>Iterative</u> software engineering process vs. human-centered (UI) design process

Requirements

Planning

Initial Planning

Evaluation

Analysis & Design

Implementation

Deployment

Testing

Source: Wikipedia (CC)

Envisionment

Understanding
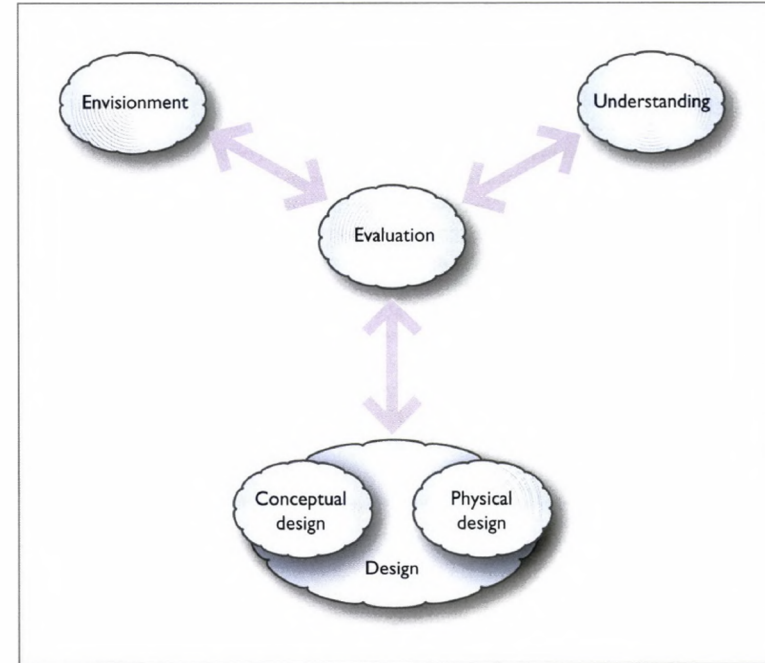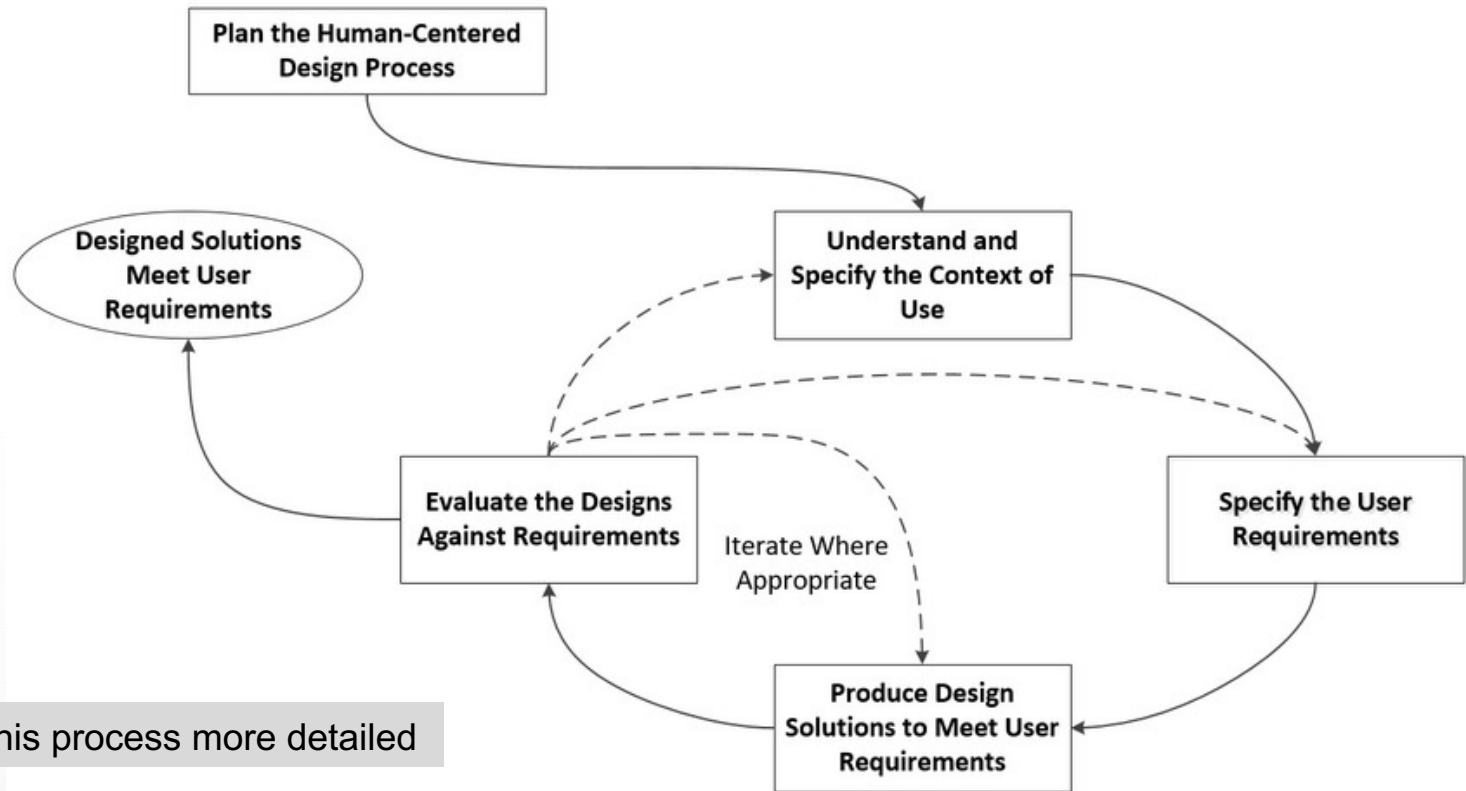
Evaluation

Conceptual design

Physical design

Design

Figure 3.1 Understanding, design, evaluation, envisionment

Source: Benyon, pg. 49

HCD design process – main focus in the course

Plan the Human-Centered Design Process

Designed Solutions Meet User Requirements

Understand and Specify the Context of Use

Evaluate the Designs Against Requirements

Iterate Where Appropriate

Specify the User Requirements

Produce Design Solutions to Meet User Requirements

We will go through this process more detailed