Assessment

7 grade scale based on deliverables and final presentation. Externally examined.

Deliverables

Exact details of the format and content of your presentation is up to you, however in broad terms, the following will be expected.

- ☐ *Design process material:*
  Demonstrate a thorough concept generation phase. For example, through sketches, pre-models, simulations, prototypes and a project journal.
- ☐ *Use scenario:*
  This use scenario should provide a clear picture of how your prototype is to be used
- ☐ *Experience Prototype:*
  A working, well-built *and* attractive prototype, expressing the research theme of your choice
- ☐ *Prototype evaluation with users:*
  Explaining the research question you want to find out, the set-up of the test, and the results

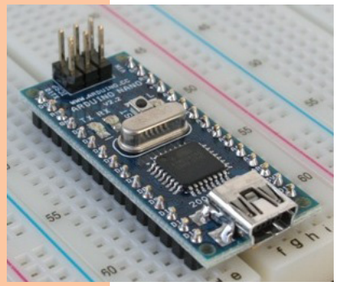
Deadlines

Mid crit.:
Friday October 29, 2010 from 9:00-12:30.
This is your chance to get feedback on your designs. Present your research theme, first prototype, sketches etc.

Prototype Exhibition:
Wednesday December 17, 2010 from 13.00-16:00.
Create an exhibition showing your prototype, video of user studies, sketches and/or photographs. The exhibition will be co-organised with the first year IT Product Design students who will present their interactive lamp.

Design crit.:
Friday December 17, 2010 (time to be decided).
In the exam, you will have 20 minutes to present the results of your project in a format of your choosing. Explain the research theme you have taken as your starting point, the resulting prototype, and how you use it. The presentation must also include the findings from your user trialing. You should choose one particular theme related to your research theme and explain it in more depth.

Different steps in the model building process: user tests (Stienstra 2003.)



User Experience Design

September 7 - December 17, 2010

Over the course of this semester you work in pairs on a user experience (UX) prototype. A user experience prototype is, as the name suggests, aimed at creating the total, holistic experience that an interaction concept would offer in use. This means that you should not only pay attention to electronics but also to build quality, materials and any mechanisms used.

Why it's important

Why should you go through the hassle of building a working prototype? Surely the world is full of clever engineers who can implement your designs? Here are four reasons why it is worthwhile doing it yourself:

Prototyping as a source of idea generation

Through making a working prototype you often get new ideas. Just as with tinkering, working hands-on with electronics, programming and mechanics affords solutions that you may not have thought of before.

Prototyping to design for experience

One of the things that makes designing interactive products so hard is that the actual experience of the dynamic action-reaction behaviour is impossible to fully capture in words, drawings or screen-based presentations. By building physical, interactive prototypes you *and your users* can experience and evaluate the interaction yourselves.

Learning to speak the language

Even though in your professional life others may build your prototype, you still need to be able to communicate with them. To this end you need to develop an understanding of engineering language and vocabulary. And there's no better way to do this than to see and feel for yourself which components and processes are meant by the terminology.

The wow-factor

There is nothing as convincing as a working prototype. Regardless of whether you need to convince your colleagues, your boss or a client, a working prototype may just do the trick.

Teachers:

Jared Donovan and Leif Bitsch*

* Leif Bitsch is an electronics engineer with years of experience in teaching electro-technicians at EUC-Syd.

it-vest

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Tangible Interaction for building skill

In this course you will be working on one specific tangible interaction research theme, namely building skills. Most of today's intelligent products exploit only a limited part of the extensive repertoire of human capabilities: they require mostly pushing, turning, rotating or sliding. In the interaction with these products, a huge load is put on people's cognitive skills, whilst their bodily skills remain to a large amount unused. We humans are however capable of very complex motor actions. These actions do not come naturally to us: we have to learn and keep developing the skills that enable us to play an instrument, be good at sports or even type an SMS on our mobile phone.

Building skill through interaction

Ergonomics traditionally has aimed to make the interaction with complex products easier through for example minimization of mistakes, design for comfort, and avoidance of pain. But actually the challenge and pride in mastering difficult skills turn out to be strong motivators for people to get engaged in specific activities. These activities, both in goal and activity, offer people ways to be different from each other, express themselves, and build ownership of the acquired skills.

Richness of actions

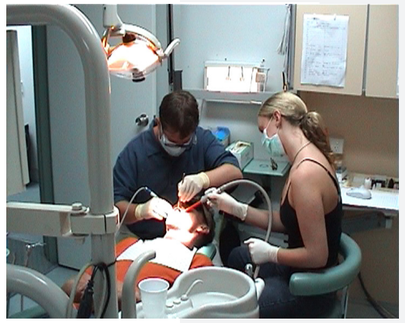
That intelligent products and their components are becoming cheaper and easier to make, opens up the design space for new interaction possibilities. The use of several sensors and actuators, the combination of analogue and digital controls and the integration of microprocessors in physical products allow for different -and richer- actions and movements. This gives more freedom to interaction designers. This, in combination with consciously designing for human dexterity, provides for interaction possibilities, which are largely unexplored in intelligent products.

Managing a prototyping process

Another important thing to learn in this course is how to deal with complexity. What this comes down to is to be able to split up a difficult problem into many, small, manageable sub-problems. For example, if you try to make a tangible interface for an MP3 player you may identify the subtasks (i) determining the position of one token, (ii) tracking the positions of multiple tokens, (iii) calculating the playlist order based on a number of token positions and (iv) actually playing the MP3s. You can then try to get these subproblems solved one by one. Once you have got the various parts working you string them together to build your system.

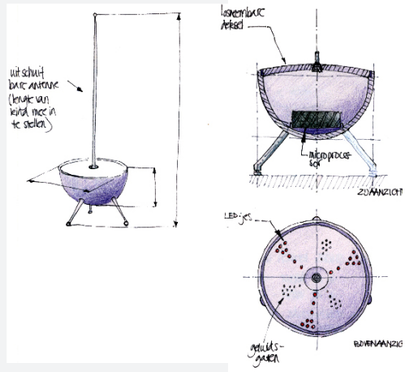
Evaluating experiences

Contrary to what the popular term experience design suggests, you cannot and should not attempt to design the actual experiences that people have. What you can do is to design with an awareness of experience and to facilitate experiences through your design. In this course, you round up the design process by evaluating your prototype with a number of users to investigate how your design is experienced in the actual use context.

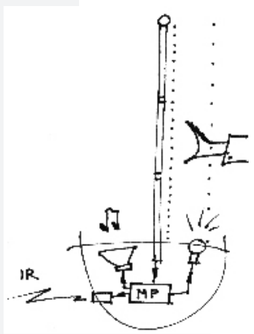


Dentist and assistant cleaning a patients teeth (Donovan 2003)

Children playing with interactive tiles (BodyGames 2003)



Different steps in the model building process: concept ideas (Stienstra 2003)



Different steps in the model building process: technical sketch (Stienstra 2003)

Different steps in the model building process: rendering (Stienstra 2003)

Topic: Interaction from the ground up

This year, the topic for the class is very broad. I want to try a theme that lets us explore general research questions in the field of Interaction Design. The theme for this year is "Interaction from the ground up".

Instead of taking the head and hands as the starting point for interaction (which is where most interaction design focusses), we are going to instead start from the feet. What kinds of experiences start from the feet and what kinds of interactive products could be made to support these? You will need to find your own research question within this very broad topic that you can answer within the constraints of the course, with design as a key component of the research.

Role of teachers

The role of teachers in this course is to guide you through the design process. At the start of the semester, we will concentrate more on giving structured activities and course content for you to work through. As the semester progresses we will move to more of a coaching and consulting role for your design projects. In a course like this, it's important to keep the plan somewhat open, so please expect changes! And please come and talk to us sooner rather than later if you are having problems or need extra resources. We want you to do as well as you can, but sometimes electronics components take time to arrive.

Semester plan

The course is planned for Tuesdays and Fridays from September 7 onwards. If no lecture is set for a day, the class is used for project work and consultation. You should come to class every time. If you don't, you'll miss out on important stuff.

Date		*Tuesday in U302 and Friday in the Co-Lab*
Tue	7.9.	Kick-off project
Fri	10.9.	Arduino introduction
Tue	14.9.	Research through design literature session
Fri	17.9.	Literature presentation / Finding a research question
Tue	21.9.	Guest workshop: Sietske Klooster
Fri	24.9.	Guest workshop: Sietske Klooster
Tue	28.9.	Aesthetics of Interaction
Fri	1.10.	
Tue	5.10.	Electronics refresh: Leif Bitsch (9:00 - 17:00)
Fri	8.10.	Ethnography of walking: Wendy Gunn
Tue	12.10.	
Fri	15.10.	
		Autumn Holidays
Tue	26.10.	
Fri	29.10.	Mid-Crit (9:00 - 12:30).
Week 44 - 49		Project work. Jared available for consultation Tue and Fri mornings (9-12). Leif available for consultation Fri afternoons (12-16).
Tue	15.12.	Prototype exhibition.
Fri	17.12.	Design crit (Time to be decided).