Industrial Design at TU/e
creating intelligent products, systems and services
Starting points

- Academic Industrial Design Engineer (ir)
- Ba (3 years) + Ma (2 years) program
- Focus on design of intelligent products, systems, and services
- Integration of technology, user and design
BUSINESS
creating added value for society

DESIGN
idea and value creation
integration of emotion, styling, ...

TECHNOLOGY
application of embedded software and communication technology

PEOPLE
designing optimal user interfaces

dept. Industrial Design

Education / Research

the TU/e
ID-ir

technische universiteit eindhoven
New Directions
research at TU/e - Industrial Design
- UCE group (User Centered Engineering)
- DI group (Designed Intelligence)
- DTR group (Design, Theory and Practice)
- Communities, Sustainability
New directions: user-centered design – ethnomethodology

- user-centered-design: match technological possibilities to people’s needs, abilities and desires
- social and cultural aspects of intelligent product environments should be explicitly taken into account
- ethnomethodology: study of common-sense routines used by people to manage and organise everyday behaviour
New directions: multimodal interaction – context-aware computing

People perspective:

• broaden bandwidth of user-system interaction
• bring naturalness to user-system interaction by capitalizing on everyday human communication skills

Product (or system) perspective:

• rich input from environment necessary for truly intelligent (i.e. meaningful and appropriate) behaviour
• multimodal output to communicate embedded potential for possible actions
New directions: tangible computing – embodied interaction

- embody mechanisms for interactive control in physical representations
- interacting through technology instead of acting on technology, or from ‘device control’ to enhanced and new ‘interactive experiences’ with a social dimension
- ‘smart’ and active tangibles that deliver system functionality that goes beyond utility and usability by inspiring, challenging, exciting and affecting people
New directions: affective computing – intimacy

• intimacy, i.e., subjective match between behaviour and operation of device, is needed to effectively communicate emotions

• pleasure is in the doing not the achieving

• expression of ‘true’ emotions is not a user goal in itself but a natural ‘by-product’ of embodied interaction

• combine research effort affective and tangible computing
Educational Innovation

education at TU/e - Industrial Design
Competency-centered learning
competencies needed by the professional field

Core Competencies
• Idea and concept generation
• Integrating technology
• User focus and interaction
• Social and cultural awareness
• Market orientation
• Form & Senses

Meta Competencies
• Teamwork
• Design & research process
• Self-directed learning
• Analysing Complexity
Learning and working closer together
the student as a “junior employee”

4 units acting as “company divisions”
in learning processes

• Entertainment  • Home
• Health          • Work

Projects and assignments acting
as a gate to open up knowledge,
skills and attitudes needed to become
an Industrial Design Engineer
Project: Honk 3

Client: Jan van Hoof, Severinus (Veldhoven)

Goal: Create exciting and useful home objects addressing the real needs and desires of the mentally handicapped family of residents living at Honk 3

Solution: Sea Life
**Project:** Operation Room

**Client:** Jakimowicz, Catharina Hospital (Ehv.)

**Goal:** Analyse lighting problems in the operation room and implementation of solutions

**Solution:** Zones of lighting and visual information displays
Project: CityLive
Student: Thomas Visser
Client: Cees Donkers, City of Eindhoven
Goal: Design a system that positively influences the user experience and the identity of the Eindhoven ring road
Solution: Ring = CityLive
Highlights

• Tight coupling between students and industry (including SMEs) throughout the course

• Rich academic learning environment consisting of an interdisciplinary mix of designers and researchers with human, socio-cultural and technological backgrounds

• International orientation

• Educational innovation