



TU/e Technische Universiteit
Eindhoven
University of Technology

INDUSTRIAL DESIGN

LEARNING FOR INNOVATION

APPENDICES



Appendices
Accreditation 2006 - 2012
Bachelor and Master program
Department of Industrial Design
Eindhoven University of Technology

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1: DOMAIN SPECIFIC REFERENCE DOCUMENT

FOR THE ACADEMIC INDUSTRIAL DESIGN ENGINEERING PROGRAMMES

Introduction In this document, the three Schools of Industrial Design Engineering in the Netherlands have laid down a description of the profile and labour market positions of IDE Graduates, some specific features of the IDE curricula and the distinction between the Bachelor's and the Master's level.

The Schools have defined the common elements for the purposes of this document. The description of the profile and the competences makes no distinction between the Bachelor's and Master's: the knowledge and skills themselves do not differ, but the level (i.e. width and depth of this knowledge and these skills) does. This difference is explained in paragraph 5.

The Schools used a number of sources to develop this document:

- The terms of reference of the last visiting committee (IDE programme Delft, VSNU-report from May 2002).
- The descriptions of the profile and objectives of the three IDE programmes.
- Criteria for Academic Bachelor's and Master's Curricula (Joint publication by the three Technical Universities) (Meijers, e.a. TU/e, 2005).
- Dublin Descriptors (NVAO protocol).
- International Benchmark in Industrial Design Engineering (TU Delft, December 2005).

Profile of the IDE graduates The industry has a proven need for academically trained product designers who can integrate knowledge from different fields of technology with human factors, who can see signals from the market and can generate creative ideas with new solutions: the Industrial Design Engineer.

A Bachelor of Science/Master of Science in Industrial Design Engineering can operate in the field of Industrial Design as an interdisciplinary designer. The graduate is able to recognise the relevant disciplines and aspects, such as technology, manufacturing and logistics, market and user, business and marketing, aesthetics and functionality and is able to integrate these aspects into the development of solutions: products or systems and related services.

In the process of developing products, the IDE graduate:

- Is able to analyse market demands and user needs along with technological and social opportunities;
- Is able to generate a (personal) vision on the design problem;
- Is able to generate and select ideas and design concepts;
- Is able to transfer existing knowledge to new problems and to implement new
- Knowledge;
- Can materialise a concept to the stage of a working model;
- Is able to take into account the marketing and the product life cycle.

The graduate is an academically educated designer. He is able to use scientific methods and techniques in the development of products and in conducting research. He is able to contribute to research projects and to the development of new knowledge. He has knowledge and skills in relevant disciplines and sciences and is able to use these in reasoning and methodological reflection during/on the process of development.

The graduate is talented, self-steering, responsible, creative, is able to build on his own knowledge and skills, is able to develop his own signature, is able to deal with limited certainties, can communicate, can document, visualise and present his design, can structure his projects, can function both individually as well in a multidisciplinary team and in an international and intercultural context.

The basis for this IDE graduate profile is formed during the Bachelor's programme and the profile is further developed during the Master's programme.

¹Based on the reports:

- 'Marktonderzoek naar de behoefte aan Industrieel Ontwerpers', Kompaene, Bluemink Innovation, Management en Daams Ergonomie, September 2000.
- 'Industrieel Ontwerpen aan de Technische Universiteit Eindhoven: Een globale marktverkenning', BOM/Syntens, 2000.
- 'De Staat van het Onderwijs, Onderwijsverslag 2004/2005', Inspectie van het Onderwijs, April 2006.

***Domains of
knowledge and
skills in the IDE
curriculum***

On the basis of the profile, seven areas of competence can be identified for university graduates in the IDE programme. Graduates should be competent with regard to all seven points:

1. Is competent in designing; A university IDE graduate can realise new or modified artefacts, products or systems, with the aim of creating value in accordance with predefined needs and requirements.
2. Is competent in the IDE-relevant disciplines; A university IDE graduate is familiar with existing knowledge and has the competence to increase and develop this through study.
3. Is competent in research; A university IDE graduate is able to acquire new scientific knowledge through research. In this respect, research entails the development of new knowledge and insight according to purposeful and systematic methods.
4. Has a scientific approach; A university IDE graduate has a systematic approach characterised by the development and use of theories, models and coherent interpretations, has a critical attitude and has insight into the nature of science and technology.
5. Has basic intellectual skills; A university IDE graduate is competent in reasoning, reflecting and forming a judgment. These competences are learned or refined within the context of a discipline, and then become generically applicable.
6. Is competent in co-operating and communicating; A university IDE graduate is able to work with and for others. This not only requires adequate interaction and a sense of responsibility and leadership, but also the ability to communicate effectively with colleagues and non-colleagues. He is also able to participate in a scientific or public debate.
7. Takes account of the temporal, social and personal context; Science and technology are not isolated, and always have a temporal, social and personal context. Beliefs and methods have their origins; decisions have social consequences in time. A university IDE graduate is aware of this, and has the competence to integrate these insights into his scientific work.

The IDE curriculum includes the following aspects/building blocks:

- Design Projects
- Design Methods and Techniques
- Engineering
- Management and Market Studies
- Design
- Human factors
- Socio-cultural awareness
- Research Practices

Furthermore, the IDE curriculum is a programme that provides a balance between the formation, processing, application, integration and contemplation of theory and skills. The Design Projects are the core of the curricula. The other building blocks are taught and integrated in the Design Projects.

***Labour Market
Perspective***

Traditionally, prospects for designers in the labour market have been closely linked to the overall economic situation. In times of a booming economy, jobs were offered to graduates even before they had finished training.

In a declining economy it can take graduates one or two years to find a suitable job. However, the enormous potential of current new developments (such as smart products, smart environments and portable products) means that new industrial designers are likely to be in great demand.

More and more governments and industry are convinced that innovation and smart design are set to play a very important role in future society.

Also, the fact that the domain of Industrial Design is widening its scope (for example to services, product-service combinations, the design of environments, the management of product development, brand design), means that the domain could soon become less dependent on the state of the economic situation.

So in the long run, the influence of design in society will increase, as will the demand for highly educated professionals in this field.

IDE graduates are found in jobs such as industrial designer, product designer, product engineer, design engineer, design manager, product manager, interaction designer, researcher, usability consultant, design-centred researcher, strategic designer, brand manager, New Product Development project leader, innovation consultant, design-brand consultant. Up until now, a relatively low number of Bachelors' graduates has directly entered the labour market.

***Differences
between a
Bachelor's and a
Master's graduate***

The Bachelor's and the Master's degree differ in terms of orientation and level

A Bachelor's graduate	A Master's graduate
Can apply knowledge in various familiar situations	Can apply knowledge in new situations
Can work under supervision; average level of autonomy	Can work independently; high level of autonomy
Can approach/tackle and solve (relatively) basic (design) problems/questions	Can approach/tackle and solve (more) complex (design) problems
Can develop knowledge and skills/ competences from related disciplines	Can develop knowledge and skills/ competences from various disciplines
Can integrate and apply knowledge and skills/ competences in relatively basic (design) problems/questions	Can integrate and apply knowledge and skills/competences in more complex (design) problems
Can participate in the design and/or research process	Can adjust the design and/or research process to meet the demands of the task at hand
Has sufficient knowledge of the disciplines to judge the relevance of new developments, and can translate this to own domain	Has sufficient deep-seated knowledge of the disciplines to be able to form a (scientific) judgment, and can translate this to own domain
Can use scientific research findings in the design process and can perform a simple research project under supervision	Can plan and perform scientific research and can reflect on the phases of the research process
Can communicate opinions, ideas, information and results clearly	Can communicate conclusions, including the underlying knowledge, motives and deliberations, clearly, convincingly (and unambiguously)

2: OVERVIEW OF COMPETENCE DESCRIPTIONS (2009)

Self-Directed and Continuous Learning Take responsibility for and give direction to your own personal development, based on a continuous process of self-reflection and out of curiosity for future developments in technology and society.

Developments in society are characterised by an enormous increase in available knowledge and information, which makes it impossible for graduates to have a complete command of their academic discipline. There is just too much to know and to learn, and what you know today may well be out of date in a number of years. Industrial Design as an academic discipline, too, is susceptible to changes. Once students have become professional designers, they will be challenged to create an environment that adapts to and supports the lives of individual people. Rather than acquiring a particular body of knowledge, this requires their ability to acquire, select and use the knowledge, skills and attitudes that they need for effective behaviour in a specific context.

This, in turn, requires an attitude of openness: not only to developments in their profession and in society, but also towards the student's own performance and learning needs in professional situations. Students graduate once but they will never stop learning. The ability to learn is at the core of becoming a life-long learner. Students should get an understanding of what learning is as an activity, discover what their preferred learning style and learning strategy is, learn how to play with various styles and strategies, and develop the skills they need to design their own learning process. This understanding should be grounded in theoretical as well as experiential knowledge.

In a competency-centred programme such as ID students need to direct and manage their own competency development, learning process and learning activities: what do they want or need to learn, and what does it take to achieve it? This requires the ability to orientate oneself on what there is to learn, to set one's own learning goals, to choose suitable learning activities (and sometimes create their own), to plan, execute and monitor these activities, to analyse one's learning outcomes in terms of competency development and to evaluate if one has achieved the goals one sets. In the end students should also be able to self- assess their competency development and growth as a designer. Needless to say, the self- management aspect of this competency only works if they take full responsibility for their own learning process.

Learning – and designing – is a process of trial and error. From making mistakes, in particular, they can learn about themselves and about designing. But this takes the courage and the ability to look more closely at themselves, their learning process and learning outcomes. What knowledge and skills have they actually acquired, what went well in the process, what went wrong, why did it go wrong, are they satisfied with the results, are experts satisfied with their results, why not, what do the results say about their identity-building as a designer, what would they do differently next time? This ability to observe

and reflect on their own learning, on the design process and on their overall development as a designer is essential to develop themselves professionally as well as personally. The ability to communicate all this will enable others to give feedback, which in turn will enable students to enhance their learning experience. Finally, self-directed and continuous learning is a competency that enables the development of the other competencies. At the same time their experiences with the other competencies provide students with specific instances of self-directed learning and as such with input for self-reflection. In this respect the development of the other competencies and self-directed learning are processes that will reinforce one another.

***Descriptive and
Mathematical
Modelling***

Being able to create and apply descriptive and mathematical models by using formal and mathematical tools, in order to justify design decisions and support the design of complex, highly dynamic and intelligent systems.

Designers operate in a complex world. In this context of complexity our students are encouraged to design innovative systems, products and related services. Technology transforms the experience and behaviour of users in unforeseen ways. In addition, problems are usually ill defined and opportunities often unlimited. All this makes the decision-making process difficult and conditional, based on the information present at that time. An academic design engineer needs to develop insight and apply powerful tools that help to take appropriate decisions. Developing their analysis and abstraction skills, as well as their descriptive and mathematical modelling competency helps students unravel principle patterns and mechanisms in this complex reality, and explore the potential impact of their design decisions.

Understanding and mastering methods and tools for descriptive modeling enables students to describe relationships between parameters resulting in systems behaviour. The next step is mathematical modelling to describe this behaviour in mathematical relationships. For engineers, understanding and learning mathematical models is the foundation for simulation and optimisation. These enable exploration of the desired and undesired capabilities of technological mediation that occurs in the complex interplay between user and artefact, as explained in chapter two. Instead of using trial and error methods, students need to explore systematically and get insight: what are the crucial properties of especially highly dynamic and intelligent systems and products that benefit from mathematical modelling? During the design process the results of these types of modelling can be compared with prototype tests and analyses.

***Integrating
Technology***

Being competent in integrating technology means being able to explore, visualise, create and demonstrate innovative concepts and experiences using technology, as well as analysing the technical and economic feasibility of complex designs in which technology is integrated. Moreover, one needs to understand scientific writings and be able to communicate with engineers and researchers of another discipline.

Designing interactive and intelligent systems, and building prototypes requires training in choosing sensors and actuators, object-oriented design, algorithms, circuits and mechanisms, and integrating them in the overall competency of designing. Next to synthesising and concretising, developing one's analytical and abstraction skills to determine the technical and economic feasibility of a design can be done through informed judgements through calculations, maths items and appropriate math tools, as well as generating sufficient knowledge that enables you to read further and go into depth on technological, design-related issues.

Designers typically work in multi-disciplinary teams. This, and the fact that intelligent systems can overstretch at some point the skills and knowledge of Industrial Design students, requires students to understand scientific writings and be able to communicate with engineers and researchers of another discipline. Thus understanding E, I and W as disciplines and being able to cooperate with the E, I and W engineers, which may require reading specifications and datasheets, documenting hardware and software, and finally awareness of computer science and artificial intelligence.

Ideas and Concepts Develop visions, innovative ideas and concepts through creativity techniques, experimentations and the translation of research.

Ideas and concepts are initiated through different ways of doing and thinking according to your attitude, influences and experiences such as: empathic thinking (concerned with feeling and sensing your way), associative thinking (compares and makes connections with different objects, places and experiences), thinking with your body and hands (e.g. sketching, physical modelling, the choreography of interaction), different analysis and selection processes to select and match the best design, and observing the flow of experience and actions as a part of the concept-forming process.

The process of generating ideas to develop into selected concepts is a major step. It is essential to practise your ability to generate and select ideas, as the key to producing effective design concepts. Train and obtain quality through quantity. Ideas are born from your experiences, observations and interactive imagination with physical/graphical objects and products.

Both non-explicit and purposeful observations provide natural conclusions about the immediate human/space/object relationships – basically 'the world around us.' The development of solutions needs to be guided by a vision, in general about transformation from our current reality to a new one through an intelligent system. We encourage students to search for innovative solutions that are meaningful and valuable for users and our society, which means that it is important to train envisioning: what kind of society do we want to have, what kind of social change does the product to be designed need to have. This means that this competency area is related to competency area 'Social Cultural Awareness', e.g. ethical aspects of what it means to intervene in people's lives, and

historical awareness. As an industrial designer you need to have a variety of activities and tools for the process of ideas generation, concept development and vision development.

Form and Senses Experience and develop through doing and abstraction, aesthetical (physical) languages that connect thought and interactive form, in order to communicate specific properties of the design concept.

The world is inherently meaningful for us, i.e. we perceive the world in terms of what we can do with it, and by physically interacting with it we access this meaning and we express meaning. Vision, hearing, touch, taste and smell all affect our reactions to objects, spaces and the physical world we inhabit. In the past, aesthetics focused on the appearance/ static form of products, where form is the arrangement of a set of elements – these can be visual elements comprising the shape, size, or colour of an object, it can be a set of sounds arranged in time, or it might be a series of smells selected to create a specific effect. With the shift towards interactive products, nowadays aesthetics focuses on (the beauty of) dynamic form and interaction, which includes static form. Because interaction creates meaning, it can stimulate designers to explore, study and design the relationships between a variety of aspects such as sensation, dynamic character, story, rich adaptive and tangible interaction, interaction style, experience, emotion, function, form and semantics.

User Focus and Perspective Understand human characteristics, goals and needs, the context of use, and create empathy with users throughout the design process. Design user-system interaction for user experiences.

Insight into characteristics, goals and needs of human beings is indispensable for designers in order to create intelligent systems, products and related services that improve the quality of life. The designer needs to have knowledge about the cognitive limitations and capabilities of human beings (what they can learn, remember and how they think, etcetera). Likewise, the designer needs to know about human emotions and attitudes, as well as about human perceptual-motor skills.

Finally, people have different personalities, are members of age groups, cultural groups, social groups, all of which influence their requirements and needs, and the way they interact with systems and products. Understanding and mastering methods for user research and testing will enable you to create empathy with the users and obtain feedback about your proposed solutions, so that you can optimally tune intelligent systems, products and related services to the characteristics, goals and needs of human beings. Knowledge about how to design the user interface and the skills to do so will enable you to create engaging user experiences.

Social Cultural Awareness The focus of our education at ID is on designing intelligent systems, products and related services for social and societal transformation. Therefore, you need to learn to drive the design process from an awareness and understanding of developments in society, envision

your designs in society, place the development of systems in a broader perspective, and take position in and evaluate the impact and mediating role of a system, product or service on society.

Industrial Design is inevitably part of the larger human society and culture. Global society is developing at a breathtaking pace. Mega trends such as ageing, globalisation, new technology and issues such as scarcity of resources, political power, economic and demographic development, play an important role in what the world will be like in the future, and inevitably influence each undertaking in life. A designer needs to develop a keen bird's eye view on this continually changing cultural landscape, turning observations and knowledge into intelligent systems which match the needs of societies and cultural communities, as well as enabling social transformation. This inevitably incorporates ethical and philosophical questions related to taking responsibility for society and the notion of "good" design. In order to be able to transform the behaviour and experience of people, as well as society as a whole, and create the designs of the future, students need a clear understanding of the past, including design history.

***Designing
Business Processes***

Bringing new products to users in a global market of a dynamic international industrial context requires knowledge of industrial business processes.

This competency area covers the topics that relate to bringing new products to users in a global market using a dynamic international industrial context. It focuses on (structures of) industrial business processes that are currently used to bring high-tech products to the market under the influence of a continuous influx of new technology with a high degree of uncertainty of future user profiles. Moreover, the system or product is not finished when

it leaves the production line, nor when it leaves the shop. Intelligent products are a never-ending story. Students are able to model, analyse and (re-)design business processes for the successful introduction into the market of intelligent systems, products and related services. They understand that a range of products might be needed for long-term business success, and they are able to design product architectures that last several generations of products and/or allow for a family of products to be introduced efficiently into the market. They are aware of the role(s) of different players in a business network and of the effects of different cultures on (communication and information in) often globally distributed business processes. Designing products and designing business processes have many similarities, including the competencies needed for this activity, where designing business processes has a strong focus on the industrial context.

***Designing
Business Processes***

Master the design process and the research process, and adjust these processes to the demands of the task at hand.

An Industrial Designer should be able to run the design processes efficiently and effectively, to reflect on different kinds and different ways of designing, and be able to

choose an appropriate design strategy for their design challenges (with a strong emphasis on the focus of his department). Therefore you need to understand what kind of activity designing is, how it differs from other human activities, and which abilities you should develop to become a designer. A successful design is highly dependent on a thorough research process as a 'knowledge builder' and 'information gatherer' about the subject domain. Specific research and design processes are planned and organised according to the nature of the design subject and context; these can be quite different and need to be considered carefully according to the required project deliverables.

***Teamwork and
Communication***

Work together towards a common goal using all strengths within a team and communicate opinions, ideas, information and results clearly and convincingly.

Design projects by nature involve many different stakeholders and experts, where designers can play a leading role in the assimilation and integration of many different parts of the project. The focus on intelligent systems, which might become very complex, urges designers to cooperate with other experts. Inevitably, this requires special skills and experiences to work in multidisciplinary teams, which are often internationally based. Teamwork is about working together, where the whole is of more value than one person working alone. Teamwork is about understanding the differences between people, how to work together towards a positive goal and most of all, teamwork is about good communication and project management.

Communication has different faces and goals. One can communicate internally (within oneself), for example with visualisations/physicalisations to enhance imagination and reflect on action. One can also communicate externally with team members, clients, experts, users, any interested audience, etc. to show and discuss design-related issues. The type of communication, e.g. presentations (e.g. oral, graphical), discussion or written reports, can be dependent on the type of activity and audience. It involves clarity, inspiration and passion, convincing others, distilling the essence, selling one's ideas, by using (body) language, gestures and materials. Understanding and being able to manipulate aspects such as structure, grammar, language and terminology, appropriateness for the reader/listener, gestures and body language, purpose, atmosphere and context can support one's message. It also requires one to act as a professional within the realm of Industrial Design.

3: REFLECTIONS BY STUDENTS

*Rens Alkmade,
reflection on his
B11 semester*

During my first semester I struggled with the system's freedom and I sometimes missed clear directions. Another hassle during my first semester was that all the information and access to learning material was scattered on different platforms. And finally reflecting on my own process was something I found difficult to do. I got an H in my first semester but decided to continue my studies because I enjoyed the freedom I had.

During my following semesters I learned to take more initiative in asking experts or other students for help. I also focused on improving my reflections by discussing them with my coaches. Throughout these semesters I have learned how to develop myself in the self-directed learning system and doing so has made me aware of who I am and where I want to go.

All in all the system was difficult for me to get used to at first. But I believe that it helped me become more independent and creative in decision-making, made me a unique designer and made me think of why I want to be a designer and what I want to design.

*Yasemin Arslan,
reflection on her
B2.2 semester*

My experiences in my second year have taught me the fundament of our educational system. After a fruitful and interesting 2.1 semester I received an unexpected Conditional in which my assessor stated that I lacked a critical approach towards my work and future learning objectives. He gave me some advice on how I could write a personal development plan in which I would find out how I had to develop myself. After I had written this, I arranged an expert meeting with him to discuss the plan. During my 2.2 semester I made it a habit to reflect shortly each day and to keep better track of my development.

The Conditional forced me to reflect more critical and frequently and this gave me more insights in my strengths and weaknesses. I found out that I had to change my approach towards the design process and I understood more clear in which directions I wanted to grow. I started to involve more experts in my work and asked for feedback on a more regular basis, which improved the quality of my concepts.

The critical approach helped me to find the internship that matched perfectly with my learning objectives. Without the Conditional I would never have been able to find the right place for myself.

This experience taught me to stop using the word 'mistake'.

*Astrid Jøns
Skibsted
Johannsen,
reflection as an
exchange student*

My feedback:

My choice of going to TU/e was mostly for the courses and there was something in the description of the education model that catches me and I was also given the advice, that TU/e might be something for me. It certainly was!

My expectation:

To gain knowledge in the courses I had chosen for the semester, increase my English vocabulary, gain knowledge about another culture and thereby get my own in perspective.

I wanted to grow in the design area, as my study is half engineering and half design.

The more personal point of view, get more in depth who I am and my qualities furthermore prove to my self that I was capable to complied a study in English.

What did I get:

My expectation was more or less fulfilled, however the study also gave me some unexpected lessons.

Through out the half year I got more in depth with my self who I am. It gave me tools in how to express who I am as a designer, further it gave me a kick to be more visionary in my further work as a designer.

I learned to add words on my qualities and myself. Being more aware of whom I am and what I want to develop and achieve as a designer. I really got an extra dimension on my design qualities.

Nevertheless, you need courage to seek out your challenges.

I need to be more brave, to survive in this world.

Disappointments:

The introduction day was ineffective and half waist of time.

It was annoying as an exchange to have chosen a university partly for the courses and then find out there is a risk not getting the courses that you expected. That you have to fight among other students to get the courses you went there for.

I missed to be among more focused students and it disappointed me that there was so few of them who really wanted to be there and make an effort. I only meet a handful of bachelor students with that kind of attitude and I would have loved being around the master students, as they seemed more focused. I can't say if it is a cultural thing or pure youth.

Last and probably the most important comment:

I would not have been without my exchange! It is definitely not the last time I am going abroad, may be next time it will be for a job.

Lorenzo Frangi,
*reflection as an
exchange student*

My name is Lorenzo Frangi and I attended a six months exchange program at the TU/e from February to July 2013. My background is a bachelor degree in Product Design and now I'm enrolled at a master course in Design & Engineering at the Politecnico di Milano.

The first approach with the educational model of Industrial Design department at the TU/e was not easy for me, because very different due to the space and freedom which is given to the student to build on his own career and personality as a designer. I found it on one side very stimulating, because the "challenge" to declare every semester your vision about design is not easy: during my five years of studying design I obviously asked myself what is design for me, but was like a passing thought, while make it written it's different and it has required a bigger effort. So I found this point useful for me, but I imagine that it could be more and more difficult if I had to do it during my first years of my studying, because the common experience (at least between most of the students in Milan) is that well, you are studying design, but you don't really know at depth what design is.

On the other side, especially for the project I found that kind of freedom quite difficult to manage, because I used to have a very defined calendar that scans the months based on the growing level of the project. For example, if the project lasts from February to June you have to present on the half of March the concept definition, at end of April the final design, and for June technical drawing and/or prototypes. I think that the theme days have this goal more or less, but a personal suggestion could be maybe to declare more the level needed for each presentation, so that the final level of the projects could be equal and the load work could be more distributed on the semester.

Talking about the assignments I find very nice the possibility to choose what you find better for you, but again, this was good for me at this point of my career but I think that especially during the first and second year there are some subjects that everyone who wants to become a designer has to learn. Another thing that impressed me is the very few amounts of hours of class in the assignments, where the double ones have just less than 4 hours per week. The consequence is that you have to work and move on your own, so become responsible about your learning. This is a good thing and I find it interesting, on the other hand some more hours especially for subjects like programming where you have to practice a lot, in my opinion are useful.

I have to say that I felt well received by the community, especially about the project. I felt from the beginning part of the big project (involving also Rob, Marieke and Mitchell) at the same level of the other guys, and not "special" due to my Erasmus state. The sharing was from both sides, for example from me with my passion also for graphic design and communication of the project, and from the others the programming side, that was quite new for me. Sometimes they could try to speak a little less Dutch and a little more English, but I think it really depends on people's character!

Another thing that helped me was the quite informal relationships that there is between the professors/coaches and students, which I think it's about a cultural difference of the Netherlands.

As a final conclusion I can say that I'm happy because I did different things than what I used to in Milan, so my competency areas are wider right now. A thing that I would like to develop more than how I did is the programming side, about what I had an introduction during the Creative Programming assignment, but I didn't insert as I hoped in the project, probably due to a too late definition of the final concept. But I have clear that programming is a subject which requires a lot of exercise and so the only way to learn it's practice.

Victor Donker,
reflection on his
B3.1 semester
abroad

As part of the curriculum the B3.1 semester gives a lot of opportunities to improve as a person and as a designer in another discipline and/or environment. Going abroad to see another country with new culture and environment can be really inspiring and eye opening. Industrial Design has a big network of faculties all around that world that allow for exchange programs.

I personally picked an internship at a university, so it was not an exchange in which I took courses. I worked as a research assistant in the Interactivation Studio on the Design Architecture and Building faculty at the University of Technology, Sydney. As part of this internship I mainly worked on an individual project for research purposes in which I created modular tools for physical and medical rehabilitation. Apart from working on this project I was also involved in tutoring of students. Helping students with mainly interaction and technology side of design helped me a lot to be better aware of what it takes to be a good designer and why Industrial Design in Eindhoven is such a rich and versatile education. Being in another design faculty I learned more about modelling and manufacturing of products. The faculty here is way more focused on aesthetics and production. As a student here you learn more about how to model certain products, from a vase to an electric drill. How to create a product for injection moulding or other production techniques is here apparently a bigger part than the actual interaction and user focus aspects. It is really good to learn about these sides of design and to be aware that design is such a big field. I think that the multidisciplinary approach in Eindhoven allows adapting fast and communicating with different disciplines within and outside the design field. It is also good to experience another system of education. It is clear to see how self-directed learning approach has influenced me as a student. That is definitely something that the students here miss. Here the education is classic and students work in another way, less grown-up maybe. Seeing and learning another mentality and design approach and skill set makes better aware and helps creating a better opinion on design and myself as a designer.

A big advantage of ID in Eindhoven is that the complete education is in English, which makes it easier at this stage to go abroad and will help later in the real design world as well. By going abroad to another (in my case English speaking) country definitely

helps to improve English speaking and writing and is therefore a big added value to the development as a professional designer.

Apart from the educational aspects I think that it is also a nice opportunity to see another part of the world and meet new people. It might be difficult to break the rhythm of the life in the Netherlands and take an adventure but that is actually really helpful. Going abroad is not the easiest way to fill your B3.1 semester, there are things that need to be arranged but it's definitely worth it. Seeing culture and nature is for me personally inspiring and I think it influences me as a designer.

I think that one of the most important aspects is the simple fact that being away in another environment creates the opportunity to compare and reflect. I would definitely recommend taking the chance to go abroad!

***Alice van
Beukering,
reflection on
her B3.1 Minor
Psychology***

Motivation

Because of the strong relation with my vision on design I decided to follow a minor in Psychology. Within design I want to focus on people with a physical, mental or social condition and support them through product design to feel included in society. I want to focus on the psychological level by addressing the topic of social acceptance in relation to human wellbeing and care. Intuitively, I felt that following a minor in psychology would help me to take a next step in developing my vision, because it could provide me with a new perspective of looking at the topic of human behaviour and mental wellbeing. Moreover, by gaining a better theoretical understanding of the field of Psychology I would develop a founded basis of what the psychological perspective means and includes. This concrete and theoretical knowledge would provide me with new starting points to bring the psychological aspects I want to design for in practice.

What I did during my minor

During my minor in Psychology I followed three first year courses and two master courses within the master "Brain and Cognition". The first year courses were: Introduction to Psychology, Cognitive Psychology and Developmental Psychology. The two master courses were: Environmental Psychology and The Psychology of Design. The three first year courses consisted of following lectures, making two extra assignments and taking exams. The two master courses consisted of making elaborated assignments every week and taking exams to complete the courses.

Introduction to Psychology

By following the course: Introduction to Psychology, I gained a broad view on the wide range of topics (sub-fields) that are covered within the field of Psychology such as: genetic and evolutionary psychology, physiology, the psychology of emotions, learning psychology, cognitive psychology, social psychology and clinical psychology (and so on). Having gained such a good and broad basis enables me to start exploring many different topics more in depth. Besides this, it provides me with new handles/starting points to

design from, as a kind of “psychological database”, which I can use throughout the design process. I am now able to recognise and know when, how and which psychological knowledge could be of added value within the design process to learn to understand a specific phenomenon better. For example, if I want to gain a better insight in a specific mental disorder, I now know it is interesting to take a look at the DSM (Diagnostic and Statistical Manual of Mental Disorders) which provides a common language and standard criteria for the classification of mental disorders. This means, I became more explicitly aware of different psychological aspects in relation to a design challenge, which enables me to start more consciously involve psychological aspects throughout the design process.

Cognitive Psychology

The other two first year courses that I followed were about two sub-fields of Psychology. Cognitive psychology is about the internal mental processes; about the way people perceive, remember, think, speak and solve problems. This gave me a better insight in how people process, interpret and respond to information, which directly relates to the design of f.e. user-friendly interfaces or product interactions. Within the field of cognitive psychology I particularly found the relationship between our cognitive representation of reality and reality itself interesting. For example: the fact that humans base the estimation of probabilities of events upon the ease in which one can think about examples of such events. Through this way of judging probabilities humans tend to overestimate the probability of f.e. plane accidents, which is a quite rare event, but the vast majority of the population widely overestimates their probability, and behaves accordingly. This is because plane accidents are more “available”, more memorable, since we are more often confronted with them in f.e. the media than we are with car accidents. By knowing such facts about our cognition I am able to better interpret how and why people experience reality the way they do. This may be interesting in relation to design, since we are (also) concerned with designing products that invoke for particular experiences. When you know how a cognitive experience is created this may help you to gain more insight in how you can actually invoke for the experience you intend to create.

Developmental Psychology

Developmental psychology is about the psychological changes (neural, cognitive, emotional and social changes etc.) that occur in human beings over the course of the entire life span. Within this course I learned about several developmental theories such as the famous developmental theory of Sigmund Freud. By studying a wide variety of developmental theories covering different developmental changes in the course of human development I gained a good view on the different changes a human undergoes during different stages of it's life. The developmental theory of Erik Erikson is for example about the different social conflict's one encounters during life. By gaining understanding of these social conflicts, I am better able to empathize with the issues my user is concerned with in a specific time in the lifespan. Furthermore, the “nature-nurture”-debate is highly important within the sub-field of developmental psychology. In short, the nature-nurture debate is about the relationship between innateness (nature/nativist) and environmental

influences (nurture/empiricist) in regard to a particular aspect of the development. A nativist will argue that a particular aspect of the development is innate, specified by the organism's genes. An empiricist will argue that a particular aspect of the development is shaped by environmental influences. Today developmental psychologists rarely take one of those extreme positions; they now investigate the interrelationship between nature and nurture, in other words: the interaction between genes and environmental influences. The nature-nurture debate is one example of an important discussion within the field of psychology. Understanding the issues the field of psychology is concerned with is important in order to know how a psychologist looks at phenomena and on which aspects he focuses in gaining a nuanced view on these phenomena.

Environmental Psychology

Next to the three first year courses, I followed two master courses. The course of Environmental Psychology was about the interrelationship between the environment and human behaviour and wellbeing. The course consisted of a combination between theory and practical assignments, wherein I had to apply the theoretical knowledge. For example, I had to examine the escape routes of a shopping mall in relation to the behaviour of humans in a situation of emergency. In this way, I learned to apply psychological theory in the field, whereby I came to notice how well (environmental) psychologists are able to observe an environment out of the human perspective. You really learn to empathise with and to look out of the user's perspective whereby the theory guides you in the way you observe the environment and in the way you focus on specific aspects in your observation. For example: how is the visibility of the escape signs in the building, or how well is one able to orientate oneself in the building using landmarks. In this way, I experienced how to apply psychological knowledge whereby I experienced the perspective of the psychologist in carrying out their practice.

The Psychology of Design

The other master course, the Psychology of Design, was about the cognitive problem-solving process (the design process) of architectural design issues. During the course I had to design a summerhouse myself, whereby I had to capture all the different cognitive actions and steps throughout the design process. With the use of this information I started to analyse my own design process in terms of the types of cognitive actions I applied to come to the end result. The analysis of the design process was made on the basis of a model (Akin) described in literature about the types of cognitive actions that should be present throughout the design process. It was very interesting to see how the model of "the reflective transformative design process" that is used here at Industrial Design can almost directly be linked to the cognitive actions as described in the model of Akin: information projection (envisioning), information acquisition (thinking), information representation (making), information confirmation (exploring, validating in context) and regulation of control (integrating). Overall, this made me even more aware of how you as a designer constantly switch between different activities in the design process and how combining the various activities eventually lead to the end result.

Design and Psychology

Overall, by following a minor in psychology I increased my sensitivity towards the field of psychology whereby I gained a deep understanding of the psychological perspective. Mainly through the comparison between the fields of psychology and design I became aware of the differences and similarities between the two specialisms (see table below).

Psychology (social science)	Design (applied science)
Truths and ultimate explanations	Possibilities, solutions and innovations
Yes or no	Wide range of possibilities
Observation and investigation of human behaviour and the mental processes that underlie human behaviour	The creation of the future through product design
Developing and testing hypotheses	Vision and goals formulated by the designer
Deep nuanced view on a specific phenomenon	Nuances as guide in the translation process from vision and goals into the design of a product
Development of theories	Gaining a deep nuanced understanding of the past
Predicting value	Predicting value

Psychology is a social science that strives for truths about and ultimate explanations of phenomena related to all human behaviour and the mental processes that underlie human behaviour. Hereby, the ultimate explanations and truths about these phenomena are either true or false; there is only one true and ultimate explanation for a phenomenon the psychologist is searching for. In order to find these truths and ultimate explanations the psychologist observes and investigates human behaviour and the mental process that underlie human behaviour. Hereby, the orientation of the psychological perspective is directed towards phenomena related to human behaviour that already have taken place, in other words the past. In the search for the true and ultimate explanation of a certain phenomenon the psychologists strives to get a nuanced and detailed view on the specific phenomenon while developing and testing hypotheses. Eventually, the psychologist strives for the formation of a theory that can account for a wide range of human behaviours and the mental processes that underlie human behaviour. When such a (valid and reliable) theory is developed, this theory then can be used to predict future phenomena relating to human behaviour and the mental process that underlie human behaviour. Then the orientation of the psychological perspective is shifted towards the future. Design is an applied science (?) that searches for new possibilities, solutions and innovations within the area of product design. The products that are developed embody new possibilities, solutions and/or innovations defined in terms of “potential or possible added value” (yet to be released in the context). As this description already implies, there is no true or false that clearly can be defined, it is like a grey area of possibilities. This strongly relates to the fact that the profession of design is oriented towards the future, or even the “creation of the future through product design”. Through this orientation towards the future truths

cannot yet be defined, which means that only a “possibility for an added value” can be defined based upon past experiences within the profession of design. In the actual design of products a designer strives for a high potential added value of a design based upon its own vision and goals. In order to be able to realize your vision and goals you as being a designer always have to develop some sort of theory (\approx vision) and expectation (\approx goals, hypothesis) about the future operation of the product you develop. This means, that for the design of products it is required to make some kind of assumptions, generalisations or to choose a point of focus, as a necessary tool to implement scientific knowledge in product design. Since, one cannot cover all variables that are related to the design of products and the context of use. Defining the assumptions, generalisations and/or points of focus is done upon a nuanced understanding of a certain phenomenon. Hereby, having a nuanced understanding of a certain phenomenon helps the designer to correctly translate its own goals and vision into the design of a product.

Psychology and design. When having described the two perspectives of design and psychology, one can easily compare both fields. First of all, it is evident that the field of design focuses on human behaviour (mainly) in order to understand how a product can influence, support or even change the behaviour of the potential user. The designer uses and applies psychological knowledge as a tool within the full design process to create products that aim for a specific goal. On the other hand, the psychologist purely focuses on a deep nuanced understanding of human behaviour and the mental processes that underlie human behaviour as being the topic of science itself, searching for truths and ultimate explanations. The field of design and psychology can be related to one another since both professions relate to human behaviour. Both professions develop expectations and predictions (\approx goals, vision, hypotheses) about human behaviour, though approached out of different perspectives. But what are the specific ways wherein psychology can be of value for a designer?

First, since the designer is oriented towards the future this requires a good understanding of the present and past. Here, psychological knowledge can provide the designer with a good and nuanced understanding of all kinds of human behaviour, enabling the designer to start creating products oriented at the future (like the way psychologists develop theories). Second, having a good and nuanced understanding of psychological knowledge is necessary as guidance for the designer in the translation process from psychological knowledge to design. Hereby, the designer should be aware of where, why and how she/he makes generalisations and/or assumptions based upon psychological knowledge translated into the design. By doing a minor in psychology I gained a good and nuanced sensitivity for the psychological perspective, which enables me to guide myself correctly in this translation process. During the lectures and lessons I followed during my minor I learned to be better able to interpret and to look critically at psychological knowledge and human behaviour by asking critical questions. This allows me to carefully start to develop my own vision on psychological topics/phenomena, allowing me to involve my own vision and goals in the translation process. Third, gaining a nuanced understanding

of various phenomena is like a box full of triggers to design for that potentially can trigger the inspiration of the designer. For example, for my current project I became inspired and intrigued by a psychological phenomenon: the attachment relationship between mother and infant, the topic on which I am now doing my final bachelor project. Fourth, psychological knowledge can be of value in the process of creating products that evoke for “new” human behaviour. Hereby, psychological knowledge can help the designer to evaluate, validate, investigate and explain the “new” behaviour that is evoked by the new product that is designed. Hereby, it is for the psychologist interesting to search for truths and ultimate explanations for this human behaviour in relation to the product, which then again is interesting for the designer. Fifth, having understanding of the psychological perspective helps me as a designer to switch between different roles within the design process. In the communication with psychologists it is important to be able to switch to the psychological perspective in order to fluently communicate with psychologists as a key characteristic and skill of the designer (= switching between multiple professions). I already have experienced this in the communication with a clinical psychologist I contacted in relation to my current project. In the meeting with the clinical psychologist I noticed that I was able to quickly interpret and understand the references the psychologist made to, for example, different psychological theories. Furthermore, I was able to relate the information the psychologist told me to other related psychological phenomena/issues (for example: when the psychologist told something about the impact of the attachment relationship on the child’s later life, I was able to ask more specific information about the nature- nurture interaction). I experienced that I was able to understand the perspective of the psychologist and to fluently communicate with the psychologist. Last, doing the minor in psychology and experiencing the psychological perspective gave me practical insight in a more theoretical oriented profession. Through this experience I became intuitively even more aware of the important balance between theory and practice. It is hard to explain in explicit terms, but by having experience with a theoretical and practical approach, this made me aware of the importance to combine both working styles: the founded basis a more theoretical approach offers in combination with the creativity and innovation a practical approach offers (\approx research through design).

Vision

Psychology forms an important aspect within my vision on design. Within design I want to focus on people with a physical, mental or social condition and support them through product design and to feel included in society. My vision is based upon my personal experience in dealing with my hearing loss, which triggered my interest for the topic of social acceptance. Up till now, I based my empathy with my user upon my own experiences. Therefore, this is a quite limited way of creating empathy with the user. At this point my developed sensitivity for the psychological perspective is of great value, since it enables me to look out of multiple perspectives at my user. This allows me to gain a deeper sensitivity with my user through a better understanding of psychological phenomena. Here, I find it important to gain a nuanced understanding of the user and its context and to use the values that are present as guidance in the process towards idea,

concept and design. The value of respect for my potential user forms the key value in the design process, since I want to strive to the design of products are trusted by the user and help the user to feel confident. In order to reach this goal I think the value of “respect” forms a key element in realizing my vision on design.

Conclusion

Doing a minor in psychology has been of great value to the development of my vision on design and the way I see myself as a designer. On forehand, I experienced it as quite a risk to really decide to follow a minor in psychology. However, it turned out that taking a step away from design actually enables you to look at design from a different perspective. It actually enabled me to make a next step in defining how I want to develop myself further. I found out that I want to focus on how I as a designer can use and interpret psychological knowledge and translate this into design. Hereby, I want to focus on the translation process from “nuances” (psychology) to generalisations (design), which I am also doing in my current project. By reflecting on this afterwards, I will be able to further develop my vision on design.

***Philémonne
Jaasma, reflection
on her B32
semester***

For my B3.2 semester I wrote my own project proposal, officially proposed by my coach Miguel Bruns- because it was officially not longer possible to propose your own FBP as a student. This would be my first remark on how I developed in our educational system: I think proposing your own FBP is very relevant for the growth of students both in terms of learning how to write a project proposal (practice for your master graduation) and also to be able to walk your own path; really design from your vision; and demonstrate a profile as designer at the end of your bachelors; you do have a degree at that point!

In my FBP I combined my experiences from assignments to choose which methods (and self-made combinations of these methods) would be suitable for my process. For example, I have had several user-focused assignments from different viewpoints, and during my FBP I modeled my user involvement plans in such a way that they represented my own viewpoint. In this way I felt that I was ‘mastering’ the theories/methods, instead of only implementing them.

Furthermore a very important educational aspect has been that; during my bachelor I became more confident in approaching stakeholders, users, clients etc. During my FBP, I attracted van Gansewinkel as supplier for materials, and called all the stakeholders that I found relevant in my analysis, to talk to them about what their role could be in the hypothetical situation of my project. I was able (confidence, professional approach, even have the mindset to get this idea) to do this because in the ID system I always had to look for contacts, resources, experts on my own.

Another key aspect for my development in my B3.2 semester is the fact that I did an internship in the B3.1 semester. This experience has given me SO MANY, CLEAR, PRACTICAL, VALUABLE insights in who I am as designer in such a SHORT PERIOD.

This would not have been possible within the boundaries of the TU/e campus. In this sense I do suggest that internships within the ID department are kept to a minimum, because going out is an experience that is irreplaceable. I know that some students feel that they are 'not ready yet' to go out into the real world, and contribute to projects in a real company. For me personally it was different; of course it was exciting and a bit scary; but I was very eager, and itching to start!!

Concretely; I did my internship at an organization (Waag Society). Until that time I had always envisioned myself working for a governmental organization because my vision is highly social and society-focused. The companies that I was interested in when orientating for my internship, all had websites that ended with '.org'.

However, there is a huge turning point; that came during my internship. I did not like the way governmental organizations work; the consortium projects, the lack of time pressure, or daily push of reality etc. It was strange to realize this change of preference; but after my internship I was convinced, strongly determined, to make my FPB a well-thought-through design, with elaborated and well-defined business opportunities. An urge existed in me, that was never present before my internship, and I am grateful for this experience because it truly opened my eyes; until the last module I did, I keep thinking back about this turning point, and how business has stayed to play an important role in my design process. Especially the realization that 'I can do business in a Phil-way'; responsibly, (SBC PPP, PSS) is part of continuous growth; I keep on finding more nuance in how business fits my vision.

Referring back to 'orientation for internship companies'; this orientation is an activity that I mentioned in my B12 showcase already. Actually that surprises me, myself, when I think about that now. Key point here is that this implies that thinking bigger than 1 semester is key for continuous growth. Perhaps this could be stimulated by a subtle element in the educational system?

For me this mindset is part of my personality, and comes naturally I suppose. Also, in the first year I often discussed with fellow students that 'older' students, or students with prior study experience and more life experience feel more comfortable in our educational system. The necessity to reflect, think forward and take responsibility are salient aspects of our educational system and should be maintained and cherished, in my opinion. So that is what the system is already good at; I think the best way for students to learn to deal with this is to try in their own ways, and perhaps with some 'issues or failures' but that is the best way to really learn, the system does not need to guide or support students more in this I believe.

And as a last note; I have to mention that I appreciate the flexibility of the system to choose your own path as student going-on-to designer. Though I have had tough discussions about not using technological means in my design, the ID system is not shallow towards

this subject and that must be appreciated. (Of course it could differ between assessors, and I was able to communicate evidence of sufficient past developments in technology).

and call it a reflection opportunity instead.

***Robin Pohl,
reflection as
a non-Dutch
Bachelor student***

TU Eindhoven first got my attention after being rejected from a design program in Germany. I found it on the Internet and enrolled, due to the „non-art“ approach to design, which appealed to me. This did not get clear by reading the information available, but by visiting the institution. The staff was and is until today remarkably friendly and willing to help. Of course moving to a foreign country poses problems. At first glance, the Dutch and especially my fellow students appeared to be very open minded. But it turned out to be harder to connect with them than I thought. Particularly during my first year Dutch was the language of choice (even in international teams) and some of the students did not know that the program was completely in English. I have also experienced discrimination against me based on my nationality. A cordial welcome feels different. Considering the fact that I moved to the Netherlands, my commitment seemed to be higher than of many fellow students and the only ones who felt similar were other internationals. This led to two things: 1. I almost exclusively have international friends and 2. Group work became dysfunctional due to differences in motivation (also the coaches should reflect on their personal values, especially in the first year and actively get involved in the groups). I have to admit that the lack of regulation boggled me, but it turned to be nice experiencing this much freedom. Yet, without the guidance of a senior student I would not have known what to do. During my second and third year, after having established a solid base, everything was easier than before. This was due to knowing the activities, the people and the places. The past three years have been an experience I would not have been able to get in Germany. Even though it has not always been easy, I wholeheartedly recommend it to anyone who is looking not only for academic, but also personal development.

***Eric Swaagstra,
reflection as a
HBO student
entering the
program***

When I entered the TU/e educational system at B1.1, I was slightly disappointed that I couldn't immediately start with the Master and had to redo the Bachelor. Now I fully understand this decision. I needed this time, not just to get used to the educational system, but especially to find out who I as a designer was/am and what my role in society actually is. I believe my identity and vision could not have been developed to this extent in one pre-semester before starting the Master.

Throughout the years I noticed that my skill set is ahead when speaking of materialization and production techniques, but behind on a free design process and an open view as well as reflection quality. It was and still is hard to break free from the design process taught at the HBO.

I visited the Master diploma ceremony this March and it was very nice to see that all the project results are very different. All students are unique in the path they chose during the years and never became the 'eenheidsworst' other educational systems deliver. I believe

this shows both the strong point of the TU/e and its flaw. As none of the TU/e students are the same, the feedback I hear from alumni is that companies do not know how to place them and are therefore hesitant to hire them.

Looking from my background I know that my previous education was therefore a perfect addition to the TU/e. I have developed in so many ways, knowing that I have a solid base to fall back on.

This is what I experience during my FMP. I am finally comfortable and confident in my design process, and I am getting the space and the trust as a designer to follow the process and project I prefer. This is supported by the coaches that are always curious and willing to push you forward. Although all projects are officially individually, I never had the feeling I was on my own.

Although I have the feeling the world is slowly discovering how good our educational system actually is, we can still work on migrating towards a more 'market-ready' designer.

Since I now have the opportunity, here is some last (unwanted) advice:

- Think less about hardcopy reports, think more about digital press material
- Think less about reflections, think more about visuals
- Think less about stories, think more about storyboards
- Think less about exhibition posters, think more about model quality
- Think less about ID-Compass, think more about feedback usable for portfolio/ LinkedIn

***Ine Mols,
reflection as a
Master student
with ID Bachelor***

At the start of my Master I decided to switch the “regular” order of the first two semesters: I started with my research project and did a design project in my M1.2. This allowed me to better develop my research competencies and apply these in my design semester.

I was able to combine an interesting set of learning activities that allowed for both a variety of development (through for instance three different modules) as well as depth: choosing modules that complement previous development and writing a paper about my previous project.

Through these activities I was able to develop most of the goals I set for myself. The main topics of the semester were: shaping my process, stepping out of my comfort zone and communicating a convincing story. For my project my most important goal was to have a more explorative process, with more making, trying things out. This was a contrast with the more rigid research process in my M1.1: these complemented each other and have

shaped my reflective explorative process. In this process I was strongly supported by my coach; who stimulated me to take new steps each week, to start making early and to take a step back to connect the dots. He also stimulated me to step out of my comfort zone. As a perfectionist I tend to stay within my comfort zone to avoid risks. Stepping out of my comfort zone more often this semester was not easy, but a very satisfying experience. I tried to do this on several levels: by approaching people even though ideas are still fresh, by aiming to design for something as abstract as emotions and by presenting a reflection on a learning activity by playing music.

Finally this semester has strongly contributed to my aim to communicating a convincing story: I tried new ways to convey my story, through personal pitches, through different 'zooms' in my report and by using more personal visuals in my showcase.

Lia Bardoel,
reflection on her
M2.2 semester
abroad

As a designer, I'm interested in the values a human being creates or adapts within their life. People's quality of life motivates me to design, to create for and with people, people with habits, emotions, and characteristics. Therefore, I chose to undertake a partnership on a project leaded by the company LEI Wageningen, in which I got the opportunity to design for, with and within farmers of rural areas in Ethiopia .

I will give a short reflection on how I worked as a designer to try to make a change in another country where most of the values are determined by religion.

Value of a designer

Working in a country where design 'doesn't exist' being the only designer was quite a challenge. People don't know your profession which its hard to explain as the closest you get to design is architecture. This makes the added value of a designer to the world even more come across. Designers have the ability to look to the world in a broad perspective where everything is possible. We have the skills and ability to connect different stakeholders or parties with one another to make a change in whatever country.

Mind-set of communication

The differences between the Ethiopian and Dutch culture ask for a change in mind-set to gain insights on the livelihood of rural farmers. As I knew I wouldn't be able to integrate within the culture, I anticipated on situations by showing my open mind-set without judgments regarding my Dutch perspectives on life. My openness invited people to come closer and not only perceive me as a foreigner, but have somehow mutual respect in the intercourse. However, you should be aware that you'd never integrate in their way of living build on their cultural values. Being aware of and accepting this fact allowed me to anticipate on these cultural differences in the process.

Intuition and research

I was doing research being an individual designer in a country without easy contact to coaching, access to literature and a prepared plan due to the unpredictable situation. This

unstable environment led to my little insecurity to make place for assertive behavior on managing activities and decisions, as I felt I was responsible for my own actions. I went subconsciously through methodologies without a linear structured approach.

Reflecting on the total research process, WW I discovered the importance of intuition in decision-making and estimating situations. The extent in which I used my intuition made me consider the rationality of intuition. "Intuition is an irrational process, based on deep understanding of the situation, rooted in long term memory used subconsciously, not biased as presumed on rational decision making" (Khatri, Alvin). I learned to trust on my 'gut feeling', even when the experiences seem to be very personal, don't be worried of irrationality.

Jackie Hendriks,
reflection as a
Master student
with IDE TU Delft
Bachelor

It was not easy to get used to the different approach; it's a great challenge and for me it took a while to find my own way at the faculty. Because the faculty is relatively small and most of the people are very open, it was not hard to make new contacts. On top of that, there are a lot of people with different backgrounds, which give me various insights on my own (design) process. I believe these are great advantages of changing universities.

The products that are developed here are more or less using electronics, which is kind of typical in this faculty. I was quite behind with my programming skills, but due to the education system I was able to schedule extra time and choose modules where I could exercise this. I am happy with the freedom that the faculty gives, because I get the chance to create my own path: I am looking for a balance between conceptual and concrete products.

For me, the atmosphere at the faculty looks similar to an industry working environment; everyone has their own working space and project and everyone helps each other like colleagues do. Another plus point is that there are experts to be found in every space, which can guide you to learn what you want or need for your project. I think it's a very inspiring environment.

Zhou Leijin,
reflection as a
non-Dutch master
student

I chose to come to TU/e because this department is doing research and design of intelligent interactive products, which is cutting-edge in my opinion and quite different from my undergraduate education.

I expected that I will learn how to integrate technology with design, but unfortunately I didn't have enough opportunity to learn. Actually the purpose of modules and projects for the master students is more about practicing than learning. I have to learn by myself beyond the courses especially in the first year.

What I get is more than I expected. After two years, I find the design skills and techniques is not the most important, the overall competency I developed will be useful in my future

career. I like the theory of this unique education system, I mean the competency areas. After I came back China, I introduced this theory to the students: <http://leijingdesign.com/wordpress/archives/932>.

If you don't mind, I will comment on each item below:

Reflection: I believe reflective learning is effective. But how to write a good reflection confused me for two years. Even now I don't know what is the standard to judge the reflection.

Project: I like the close collaboration between the department and companies. For two of my projects I have a client, so that I can do user research and practice design process in a real context.

Module: The module is intensive and efficient. Because of the limited time, I find some of the modules miss enough background information of the field. I hope the teacher can provide some related papers or pamphlets so that we can understand deeper of the module.

Assessment: The most exciting thing is that before the day I will never know who will judge and whether I can pass this semester. There are so many factors to influence the final verdict: my project, design of the showcase, my reflections, feedbacks I received from my coach and teachers, assessor's opinion. I finally realized this is real life. If you fail on some details, you will fail the result.

Two years is neither long nor short. I think I benefit a lot of this experience. Thanks much for the department and all the teachers!

***Theodora Kyrgia,
reflection as a
non-Dutch Master
student***

My name is Theodora Kyrgia and I am an international Master student at the Department of Industrial Design at the Technical University of Eindhoven. My background is in Architecture but when I started looking for Industrial Design Master Programs the name of TU/e was one of the first I encountered on my search.

My impression of the department and the University is that it is a well-organized institution that cares a lot for the new students. It is not easy coming to a new country as a student, but the intro-week organized by the University was a nice welcome. The people who were responsible for the students were well informed and helpful and the students helping us were friendly and organized. The only thing missing from the introduction was a more in depth explanation of the competencies and how they would be integrated in the

² Tomico, O, Winthagen, V.O. and van Heist, M.M.G, (2011), 'designing for, with or within: 1st, 2nd and 3rd person points of view on designing for systems'

semester (how to choose the modules and why, how the competences can be developed through the SDL mode of study, what is the work of the competency coach and how I am expected to work with him on my projects).

During the semester the other students were more than helpful in explaining everything I needed to know, from where I can print to how I can start programming my Arduino for my project. Due to my lack of knowledge on programming and electronics it took me a lot of time to get acquainted with it. Unfortunately, there are no courses that teach Master Students from different backgrounds how to use programming in their design process. However, in the department there are a lot of people, coaches and students, willing to provide help to whoever needs it. With their help I managed to have a working prototype for my first project and I showed a huge development in the competency of Integrating Technology.

To enhance the educational experience, TU/e offers several workshops both from the department of Industrial Design (ex. getting started with electronics) and from the Student Office (Training days). These workshops helped me not only get more familiar with subjects needed for my study, but also prepared me to start looking for job opportunities. Moreover, the University offers Dutch lessons to International students, which is a very important asset when someone wants to stay and work in the Netherlands after their studies.

Having almost finished my second semester at the MSc Industrial Design, I feel very lucky to have been accepted to TU/e. It is a very challenging program, as the SDL mode of study needs a lot of discipline and organization skills, which I still have not perfected. Moreover, sometimes I feel a lot of pressure to be successful in everything, as when someone gets an 'H' they have to repeat the whole semester, which is a significant financial burden to students from other countries. However, I feel that the education I am receiving has a very high quality and it definitely helps me develop my own vision and strength as a designer and as a person.

***Summary of group
reflection***

At the department of Industrial Design, the students recognize clearly the important education components of our competency-based learning system from day 1. They experience the first dive experience immediately after they enter the department. They are treated as the junior employee and need to develop their own learning path and to learn how to learn. The competency-based learning framework is the first that they need get acquainted with. They perceive this framework as the basis to understand design and learn to design. It defines a set of skills and expertise that the students need to develop, although it is still not clear to them, sometimes, how to keep the balance in developing different competencies. They are just simply learning and trying to grasp every element provided.

They are offered with different assignments in the bachelor and they need to join design projects first in groups and then individually. They experience the assignments as the basic building blocks for them to develop skills and introduce them to different interesting competency and knowledge directions. They realize that it is possible for them apply what they have learned in the assignment into the design projects. The only limitation is that to get into the assignment that they are interested is very difficult due to the small scale of the class, limited number of assignments and strong competition in registration.

In (group) projects in the bachelor program, the students discover each other capabilities, learn design research processes, learn to manage multi-tasking and deal with time management, learn to work with clients and stakeholders, learn how to involve external parties to participate in their projects. These projects offer them a ground to explore their own interests, develop their vision and approach. These projects are normally coached by academic staff members or freelance designers. In the master program, the project is on individual level. Students choose more cautiously about the projects that they are doing as they are more certain about the learning goals and learning path. They experience the project really the place to demonstrate their integral skills and competencies.

From the weekly project coach meetings, they receive feedback on their design, design process and project management skills. The coaches help the students understand their improvement over time and their strength and weakness. Both bachelor and master students experience that the coaches sometimes have double roles in the project. On the one hand they write the project description and have certain expectation of the projects results. On the other hand they coach the students not only on project process, but also on their competency development. The students sometimes find it very challenging to maintain the balance between meeting the expectation of the coaches and fulfill their own growth. They consider this as their personal development challenge: how to get the stakeholders on board and work together. They also think that the coaches need more training on how to coach. They love the expert system that is in place. They receive valuable advice on their design approach, identity and vision. They receive also inspiration from the expert for their projects. They consider that by talking to experts the validity of their projects is improved. They also start to create their own network of experts.

In the third year of the bachelor program, the students have opportunities to do an internship projects in industry. They then get to learn what industry needs from them and realize what they need to develop further. They consider this as a real assessment on their strength and weakness. Through the internship, they get better understanding of what their role can be in a company, learn to take their responsibility more seriously, develop their professional conduct and support the development of their design identity. Master modules are considered very interesting. They offer the students opportunities to get acquainted with design research projects in the department and the students are glad that they could contribute to the research development, especially when they are sufficiently briefed. In some cases they also offer opportunities for students to work with

real industrial partners. They really enjoy those modules as it provide them close contact with industry.

From projects, assignments, modules and assessment the students receive feedback from the coach, assignors and assessors. The feedback will give them input to further develop themselves further. The students find the quality of the feedback really varies, also the feedback deadline is not always followed.

During the academic year and next to formal learning activities organized by the education department, they also have self directed learning (SDL) activities in which they organize themselves what they want to learn and how they are going to learn. Some students use the SDL activities to catch up the development of missing competencies, other more developed students use SDL activities to do new projects that can integrate what they have already learned into practice. SDL really provide them opportunities to develop their design vision further.

At the end of each semester, there is an assessment taking place. Each student is evaluated based on their exhibition, showcase, and assessor meeting. They like the exhibition as it provides them opportunities to learn other students projects and get to know their capabilities for potential future collaboration. They also enjoy making the showcase after they develop some basic skills of website building, flash or others. The showcase gives them a helicopter perspective of their growth and also their future directions. They do experience that the assessment results really depends on the assessor, although there is a plenary assessor meeting afterwards. They hope that the assessors will be better informed and coached.

Tim Scholten,
reflection as
his role as
commissioner
of education for
LUCID

In my role as commissioner of education I was responsible for educational affairs within Study Association Lucid of Industrial Design. In this 'board year' I was part of the Faculty Council, the Education Committee and the Student Advice Council for the board of the TU/e (SAO) and organized Parents Day and a Lucid Festival. Within an organization like Industrial Design it is needed to have someone that can act as a bridge between the students and the board of the department. The commissioner of education gives the students a voice and a place to go, to ventilate their opinions. I was able to do this especially in a weekly meeting with the Director of Education (Caroline Hummels) and by meeting students throughout the day in the 'board room'.

This year of being member of the board of Lucid, was not only good for the community, but also for me personally. I now know what it takes to be a board member of an organization with over 600 members, with all their opinions and demands. I proved to myself that I can act in unfortunate situations, can communicate and work together on a professional level, know how to use and build up a network and especially, to take responsibility.

Partly because of the knowledge I have gained in this board year, I was confident that I could start my own company and bring this company to a professional level. Two and a half years later the company is healthy and running. Everyday there are moments that I benefit from the knowledge and skills I have acquired in the year I was the 'commissioner of education of Study Association Industrial Design Lucid'.

4: EXTERNAL PROJECT CLIENTS 2006/2012

- 2M Engineering, Veldhoven
- 3M Optical Systems
- Academisch Ziekenhuis Maastricht
- Adelante Zorggroep
- Adidas
- Adidas Innovation Team
- Adidas Wearable Sports Electronics (Textronics, Inc.)
- Afasievereniging Nederland
- Albert Heijn
- ALICE Lab
- Alissa Antle
- Aphasia Center in Eindhoven
- ARC Cambridge and CMD (UK)
- Area51
- Arly
- Assembleon Pick & Place solutions bv Eindhoven
- ASTRA project
- ATR Promotions
- Audio logic Centers
- Automotive Technology Centre
- AWG Architecten (Jan Verrelst)
- B&O
- Baltan Laboratoires
- Beheer Strijp-S
- Berkenschutse AOT
- Biotecture
- Brabantia
- Brabantwater
- Brainport Health Innovation
- Brech
- Brood en Spelen Consortium
- Butterfly Works
- Carehome, Utrecht University
- Cartesius Institute
- Catharina Ziekenhuis, clinical psychology-psychotherapy (Gerbrand van Hout)
- ChainWorks
- Chocolate Museum, Cologne, Deutschland
- Conante
- Consortium Brood en Spelen
- Consortium Water en Gezondheid
- Creative Learning Lab
- DAF Trucks (Wil Helmes)
- David Frohlich Innoviting
- De Bever Architects
- De Klankspeeltuin
- De Ruimtemakelaars
- De Wever
- Department of Media and Culture, University of Amsterdam
- Department of Medical, Clinical & Experimental Psychology, Universiteit Maastricht
- Design Academy Eindhoven
- Design Cooperation Brainport
- Design for All
- Desso

- Devoyd
- DFDS Seaways
- DHS
- Dienst Maatschappelijke Ontwikkeling Eindhoven (sportcomplex Eindhoven Noord)
- Difrax B.V.
- Digifit
- Digital World Research Center, Surrey (Chris Lim)
- DIMI (Jan Voute)
- Dirrix architecten
- Douwe Egberts
- Dr. Leo Kannerhuis
- DSM
- Dura Vermeer Business Development
- (Bouwen met Water)
- Duux
- E-plus
- EE labels
- Embedded Fitness
- Emet BV
- Enia Carpets
- ERASMUS IP
- Ergon
- EU project SEAT
- EU project SOFIA
- Exmouse
- Fontys (Janienke Sturm)
- Fragmenta
- Fun industries
- GameFactory Online
- GameLab
- Gebouw F
- Gemeente Eindhoven
- Gemeente Tilburg
- GGD Eindhoven
- GGzE
- Conditional Design Droup (Luna Maurer)
- Governmental project Smart Surroundings
- Green Fashion project team
- Grievink Design
- Griffin Technology
- Habion
- HeliXer (Philips, TNO, Brabant Water, KWR, Waterschap de Dommel)
- HEMA
- Hive Networks
- Hogeschool Utrecht. Jelle van Dijk
- House of GINA
- ICSE
- IKEA
- iLighting the world
- IMEC NL
- Independent Living project
- Innofa
- InnoFlow
- Innosport,
- InnoSportLab Sport en Beweeg!
- Intelligent Lighting Institute

- Interactive Cognition Lab,
University of California, San Diego,
USA (prof. David Kirsh)
- JCDecaux
- Jiangnan University
- Just Products
- Keep an Eye Foundation
- Kempenhaeghe
- KIEN
- Kingsford University (Nancy
Tilbury)
- Kingston, Universal Design
- Kiva
- Klankspeeltuin
- KLM Engineering and Maintenance
- Klooster
- KOLBUS GmbH & Co. KG
- Kompan
- Kooymans Design
- La Red
- Lagabbia
- Lifeport
- Light Initiative - Sound Spaces
- Lloyd Hotel Amsterdam
- Lowlands
- Lumalive
- Luxlab
- Maraxis
- MARS 500
- Material Sense
- Máxima Medisch Centrum,
Neonatology Intensive Care Unit
(Bambang Oetomo)
- Máxima Medisch Centrum,
Perinatology and Gynecology,
Medical Simulation (Guid Oei)
- Maxit
- MC Dance
- Metatronics
- Modint
- Nano Supermarket
- Nanopodium
- National Center for Stress
Management
- Nextdoor
- NH hotels
- NIN
- No switches allowed consortium
- Noldus BV
- NS Dutch Railways
- NUS
- NXP (Łukasz Szóstek)
- NZE
- ONDAL Industrietechnik GmbH
- Open University of Catalunya
- Openbare Bibliotheek Amsterdam
(OBA)
- OpenLight
- Out of Office
- Pal4
- Park Strijp Beheer
- Pasion research project
- Peppelrode
- Philips & DeBever architecten
- Philips Applied technologies

- Philips Consumer Lifestyle
- Philips Design
- Philips Design Research (Gavin Proctor)
- Philips FinnoHub
- Philips Healthcare Systems
- Philips InnoHub
- Philips InnoHub Singapore
- Philips Lighting
- Philips Lumiblades
- Philips Research (Boris de Ruyter)
- Philips research (Peter Notten)
- PlayFit consortium
- Plus Communications
- PON Brabant
- Powerboat-rotterdam.nl
- PPG Architectural Coatings
- Pratham
- Pro-fit
- Projectbureau Spoorzone
- Protei
- Province Friesland
- PSV
- PuppetEmpire
- Raak-Internationaal SixPac
- Random Dance Company UK
- Rayfish Biocustomization Inc.
- RedBull Nederland
- Richard Appleby Design, UK
- Rode Kruis
- Ronald McDonald House
- Royal Health Foam
- RTM
- Rutgers Nisso
- Sanofi-Aventis
- Schmersal
- Serious Toys
- Singulus Mastering bv Eindhoven (Mr Peters)
- Sint Lukas Brussels
- SintMaartenskliniek
- Slachtofferhulp
- Smart Contextual Services consortium
- Sport Centre Eindhoven
- Sportpark Eindhoven-Noord
- Sports and Technology Eindhoven (Kjille Hoeben)
- SRE Milieudienst
- St. Marie hospital (Richard Duro)
- START Foundation
- STEIM
- Stichting MEE ZO Nederland
- Stichting NKT
- Stichting Polak
- Stichting Sport & Technology
- Stichting Toekomstbeeld der Techniek
- STREPP
- STRP-S Festival
- Studium Generale
- Swinx BV
- Syntens

- T + Huis
- Tefal
- Thales
- Thales Avionics, Toulouse, France
- TheBrainConnexion
- Tiny Love
- TNO Defence, Security and Safety, Business Unit Human Factors
- TNO Quality of Life, department Youth, Movement and Health
- TNO Science and Industry
- Tomtom
- Top Technology Institute Lighting
- Toyota, Brussels
- Triple Double
- TU/e - Campus, Groep-één
- TU/e - Communication and Expertise Centre
- TU/e - Department of Biomedical Engineering (Daisy van der Schaft)
- TU/e - Department of Built Environment
- TU/e - Department of Industrial Engineering & Innovation Sciences
- TU/e - Department of Mechanical Engineering
- TU/e - Human Technology Interaction (Jeffrey Breugelmans & Wouter van der Heijden)
- TU/e - Information Expertise Centre
- TU/e - STU, International relations office (Karen Ali)
- TVM scating team
- Unilever
- Unit040
- Universidad La Coruña
- University of Siena (Patrizia Marti)
- University of Surrey (Chris Lim)
- V2
- Van Breemen Technology & Innovation

- Van Gansewinkel
- VanBerlo design
- Vermaat & Boer Verliescommunicatie
- VIP Lab
- Voedingscentrum
- VU University Amsterdam, Faculty of Psychology and Education, Clinical Child and Family Studies (Dr Agnes M Willemen)
- Waag Society
- Waterschap De Dommel
- Webchair, Delft
- Wikitherapist Research Project
- Wilhemina Kinderziekenhuis (Nathalie Jansen)
- WorkDesign
- Y'All Solutions
- Yakers

5: PROJECTS ACADEMIC YEAR 2011/2012

SEMESTER 1

Code	Name	B11 + B12	B21 + B22	B3.1	B3.2	M1.1	M1.2	Client
DPC		Changing Behaviour (Bruns Alonso)						
DPC24	A rewarding social life		1		1	1	1	Voedingscentrum, Gemeente Eindhoven, Adelante Zorggroep, Autism expertise centers, Kempenhaeghe,
ID-13DPC25	Relax, eat well and get a good night's sleep	1			1	1	1	Voedingscentrum, National Center for Stress Management, Philips Research
DPC26	Stress prevention and relief through collegiality in the new world of work		1		1	1	1	Philips Design, TU/e Architecture
DPD		Next Nature (Van Mensvoort)						
DPD16	Adaptive & Informative Skin	1			1	1	1	ID Research
DPD36	Food Technology		1		1	1	1	TU/e BMT, Daisy van der Schaft
DPD37	Future Paint				1	1	1	PPG Architectural Coatings
DPD24	Nano Supermarket		1		1	1	1	Nano Supermarket, TU/e, Nanopodium
DPD26	The Record of your life				1	1	1	Steim Amsterdam, ID Research
DPD29	Re-Light My Fire				1	1	1	Philips Lumiblades
DPG		Comfort & Bonding (Chen)						
DPG56	Smart Sleep	1			1	1	1	Royal Health Bed, Philips, Kiva, NIN, van Someren, Kempenhaeghe
DPG57	Design for Elderly Care				1	1	1	TNO, IMEC NL, 3M Optical Systems, Catherina Ziekenhuis
DPG58	NICU of the Future		1		1	1	1	Sidarto Bambang Oetomo, MMC
DPG59	Mediated contact - How to connect				1	1	1	MMC/NICU, Ronald McDonald house, Parents of premature baby, Misha
DPG60	Medical simulation and team training				1	1	1	MMC
DPG61	Motivating arm-hand use with games		1		1	1	1	Adelante Zorggroep
DPG62	Social Media for People with Aphasia				1	1	1	Aphasia Center in Eindhoven, Afasievereniging Nederland
DPH		Playful Interactions (Bekker)						
DPH53	Tangible Games for Design				1	1	1	Alissa Antle
DPH54	Creating Play				1	1	1	Intelligent Play Environments (CRISP) heeft focus dit semester!, Playfit
DPH55	And Action!		1		1	1	1	INTERREG Pro-fit, Raak-Internationaal SixPac

Code	Name	B11 + B12	B21 + B22	B3.1	B3.2	M1.1	M1.2	Client
DPH56	Sounds like play, looks like play	1			1	1	1	Klankspeeltuun, STEIM, STRP-S Festival
DPH57	Share, connect and play				1	1	1	Brood and Spelen
DPH58	Alt Space Enter Play		1		1	1	1	STU, PI Theme, Several Companies
DPH59	Designing for a Healthy Campus				1	1	1	Sports Centre Eindhoven
DPL		Wearable senses (Versteeg)						
DPH59	Designing for a Healthy Campus				1	1	1	Sports Centre Eindhoven
DPL48	Plug me in	1			1	1	1	Desso
DPL49	Connected Movement				1	1	1	Tomtom, Adidas Textronics, InnoSportLab Sport en Beweeg!
DPL50	Bringing sports to life				1	1	1	Adidas, Innosport, Sportpark NZE, Tomtom
DPL51	Social Fabric				1	1	1	
DPL52	Projection perfect		1		1	1	1	Nancy Tilbury (Kingsford University) Christian Lagerwaard, MC Dance, V2
DPL16	Beyond Accessory				1	1	1	Brech
DPI		Out of Control (Terken)						
DPI30	Time and peripheral awareness		1		1	1	1	
DPI31	Beyond your walls				1	1	1	B&O, ID, Information Expertise Centre, Library of Skills, Philips Consumer Lifestyle*, Philippe Healthcare* (*to be confirmed)
DPI32	The Walden Utopia Protocol-WUP				1	1	1	OoC Theme
DPI33	Cultural Interventions	1			1	1	1	STRP, Baltan, Keep an Eye, RTM, NS, Nextdoor
DPI34	Smart Cities		1		1	1	1	Municipality Eindhoven, TNO
DPI35	Everyday living				1	1	1	Philips Design
DPM		Light Time Space Move (Van Essen)						
DPM67	Delighting the Mind		1		1	1	1	Erik Kuipers, GGzE, Philips Lighting, Local government, TU/e, professional caregivers
DPM62	Lights Apps for the breakout area		1		1	1	1	Intelligent Lighting Institute, Smart Contextual Services consortium
DPM63	Caring for Adaptive Lighting Systems				1	1	1	Remco Magielse
DPM64	OpenLight: Behave!				1	1	1	Philips Design, Lighting, OPENLIGHT
DPM65	OPENLIGHT: The TL Tubes Fell out				1	1	1	ILI OPENLIGHT
DPM66	Active Learning		1		1	1	1	

SEMESTER 2

Code	Name	B11 + B12	B21 + B22	B3.1	B3.2	M1.1	M1.2	Client
DPC		Changing Behaviour (Bruns Alonso)						
DPC27	Design for Sociability				1	1	1	
DPC28	Designing out Crime	1	1		1	1	1	Gemeente Eindhoven
DPC29	Helping people to help themselves in finding less stressful ways of working	1	1		1	1	1	Philips Design
DPC30	Opening new channels for communication				1	1	1	Kempenhaeghe
DPC31	Personalized social interactions with beloved ones				1	1	1	
DPC32	Susceptibility profiles				1	1	1	
DPC33	The affordances of good food	1						
DPC34	Time perception				1	1	1	
DPD		Next Nature (Van Mensvoort)						
DPD16	Adaptive & Informative Skin	1	1		1	1	1	ID Research
DPD24	Nano Supermarket		1		1	1	1	Nano Supermarket TU/e
DPD36	Food, Technology, Design		1		1	1	1	TU/e BMT - Daisy van der Schaft - Cor van der Weele
DPD38	SynBio-Kit		1		1	1	1	Biotechture TU/e
DPD39	Wild Robots		1		1	1	1	Protei
DPG		Comfort & Bonding (Chen)						
DPG60	Medical Simulation and Team Training	1	1		1	1	1	Máxima Medisch Centrum
DPG61	Motivating arm-hand use with games		1		1	1	1	Adelante Zorggroep
DPG62	Social Media for People with Aphasia				1	1	1	Afasiencentrum Eindhoven - Afasievereniging Nederland
DPG63	Bonding between Parents and Teenagers				1	1	1	Dr Agnes M Willemen - VU University Amsterdam - Faculty of Psychology and Education, Clinical Child and Family Studies
DPG64	Smart Sleep	1	1		1	1	1	NIN - Royal Health Foam - UV Amsterdam - Philips
DPG65	Comfort and Bonding for Babies		1		1	1	1	Sidarto Bambang Oetomo, Máxima Medical Centre (MMC)
DPG66	Comfort Chair				1	1	1	Catharina Hospital Eindhoven - TU/e - Maxima Medical Centre Eindhoven - Webchair, Delft - van Berlo design Eindhoven

Code	Name	B11 + B12	B21 + B22	B3.1	B3.2	M1.1	M1.2	Client
DPH		Playful Interactions (Bekker)						
DPH60	Act to play				1	1	1	Josee van Boxmeer Pro-fit consortium - Depending on direction: Nyha
DPH61	Adaptive expression				1	1	1	Steim
DPH55	And Action!				1	1	1	Janienke Sturm, Fontys - Digifit - Embedded Fitness
DPH62	Infinite Playground	1	1					Kompan - CRISP consortium - Lowlands
DPH63	I've got the music in me	1	1					De Klankspeeltuin
DPH64	Expressive light scribing				1	1	1	PlayFit consortium
DPH65	Object: playfulness	1	1					PI Theme - Tilde Bekker
DPH57	Share, connect and play				1	1	1	
DPL62	Designing for a Healthy Campus	1	1					Sport Centre Eindhoven
DPL		Wearable senses (Versteeg)						
DPL53	Sense me, connect me				1	1	1	Metatronics - Unit040 - Waag Society - Modint - De Wever
DPL54	(Es)Sense				1	1	1	
DPL55	Wellbeing, from ideal to real				1	1	1	Sportpark Eindhoven Noord
DPL56	TechCrafts	1	1					Design Academy Eindhoven - V2 - Waag Society
DPL57	Be here, see there	1	1					
DPL58	Beyond Accessory				1	1	1	Brech
DPL59	Connected Movement				1	1	1	Sportpark Eindhoven Noord
DPL60	Hidden Senses in a Shared Place				1	1	1	
DPL61	Sustainable Tex				1	1	1	
DPL62	Designing for a Healthy Campus	1	1					
DPI		Out of Control (Terken)						
DPI36	Responsive Environments				1	1	1	House of GINA - De Bever Architects
DPI30	Time and peripheral awareness				1	1	1	PuppetEmpire
DPI35	Everyday Living: Blurring the boundaries	1	1					
DPI37	Everyday Living: Web of Light				1	1	1	Park Strijp Beheer - Philips Design
DPI38	Everyday Living: Open Inno- vaton Space	1	1		1	1	1	Design Cooperation - Brainport
DPM72	Cultural Interventions				1	1	1	
DPI31	Beyond Your Walls				1	1	1	Industrial Design - Lifeport - KIEN - GGZe

Code	Name	B11 + B12	B21 + B22	B3.1	B3.2	M1.1	M1.2	Client
DPI39	Interactive storytelling	1	1		1	1	1	Alice project
DPI34	Smart Cities: Internet Café 2020	1	1		1	1	1	Cees Donkers (Municipality Eindhoven)
DPM		Light Time Space Move (Van Essen)						
DPM62	Light Apps for the breakout area	1			1	1	1	Intelligent Lighting Institute, Philips Consumer Lifestyle, Y'All Solutions, Devoyd
DPM63	Caring for Adaptive Lighting Environments				1	1	1	Adaptive Lighting, Environments reseach, programme led by Remco Magielse
DPM67	Delighting the mind		1		1	1	1	Erik Kuijpers, GGZE - Based on the development of the project we will provide the oppotinity to cooperate with:
DPM68	GlowWorm: proactive and reactive sets of light artifacts	1			1	1	1	Philips Lighting, GGD, City of Eindhoven, Altuition, Ananz, Brainport health innovation
DPM69	Transient tides of light		1		1	1	1	Intelligent Lighting Institute
DPM70	OPENLIGHT: Lux Agitat Molem				1	1	1	LTSM - Intelligent Lighting Instiute - OpenLight
DPM71	OPENLIGHT: No upward limitations				1	1	1	OpenLight, the creative lab of the Intelligent Lighting Institute
DPM72	Cultural Interventions				1	1	1	Rombout Frieling - OpenLight, the creative lab of the Intelligent Lighting Institute

6: ASSIGNMENTS ACADEMIC YEAR 2011/2012

Code	Links to	Title	Assignor(s)
DG000		Introducing Competency Centred-Learning	Bruns Alonso
DG001		Introducing the ID Competence Framework	Bruns Alonso
Ideas and Concepts			Bruns Alonso
DG101	DRP	Cardboard Modelling	Frens
DG103	FS	T.A.B.	Franssen
DG104	FS	Panamarenko	Franssen
DG107		An Introduction to Game Development	Németh
DG115	FS	Training the Creative Body	Klooster
DG118		Material Matters	Franssen
DG119	DRP	From Idea to Concept	Bruns Alonso
DG120	UFP, DRP	Co-reflection	Tomico Plasencia
DG121		Exploratory Sketching	Van de Wiel
Integrating Technology			Langereis
DG200		Creative Programming for Designers	Feijs/ Hu/Peters/Ahn/ Funk
DG201		Rapid Prototyping	Delbressine/Bangaru
DG205		Material Behaviour	Delbressine
DG206		Manufacturing Technology	Delbressine
DG215		Principles of Intelligent Systems	Ahn
DG218		Digital Communication Systems	Chen
DG220		Introducing Electronics	Kuipers (E)/Langereis/ Chen
DG230		Sketching Interactive Systems	Obrenovicz
DG233		Microcontrollers: Arduino and beyond	Langereis
DG234		Intelligent Products	Barakova
DG236		Creative Apps	Hu/ Peters/Funk
User Focus and Perspective			Terken
DG300		UFP Basics	UCE group
DG302		User Testing	Van den Hoven
DG303		Human Processes 1: Designing for Usability	Terken
DG304		Human Processes 2: Designing for the User Experience	Terken
DG305		Designing for Children and Elderly	Bekker
DG306		User Research Methods	Van den Hoven
DG308	DMM	Discrete Interaction Design	Rauterberg
Social Cultural Awareness			Brombacher
DG401		Trends Cockpit	Skalska
DG402		Modern!	Kint
DG403		Post-Modernism in Industrial Design	Kint
DG404		Visions of the Future	Rouvroye
DG406		Intercultural Design	Winthagen
DG407		Design in International Teams	Winthagen, Alblas
DG408		A Voyage to Laputa... Japan	Kint, Hengeveld

DG409		Design for the Environment	Winthagen
DG410		The Use of Art	Versteeg
DG411		Milano TrendTrip	Skalska
DG412		Intercultural Awareness	Bremen van den
Designing Business Processes			Brombacher
DG504		Product Platform Design and Roadmapping	d'Archard van Enschat
DG505		Financial Aspects of New Product Development Processes	d'Archard van Enschat
DG508		Co-Creation	Mulder
DG509		IP and Product Design	De Torbal
DG512		Business Modeling	Van den Boom
DG513		The Sound of Service	Meuffels MEHG, Snelders
Form and Senses			Bruns Alonso
DG601		Digital Video	Gijsbers
DG605	UFP	Sound Design	Eggen
DG617	UFP	Tactile Experience	Van den Hoven/De Waart
DG618	SCA	Interaction between Dynamic Form and Culture	Kint, Ross
DG621		Kansei Design: exploring values in experience	Lévy
DG624	IC	Look!	Bruns Alonso
DG627	IC	Basic Physical Formgiving Skills	Bruns Alonso, Frens, Hengeveld
DG628	TC	Designing Visual Information	Hengeveld
DG629		Communicating with Moving Images	Németh
Teamwork and Communication			Snelders
Design and Research Processes			Rauterberg
DGB01		Anti Dogmatic Design	Rauterberg
Self-directed and Continuous Learning			Markopoulos
Descriptive and Mathematical Modelling			Martens
DGD01		Modelling of Discrete Systems	Keijsper (W&I)
DGD02		Modelling Complex Systems	De Graaf
DGD03		The Mathematics of Sound	Anthonissen (W&I)

7: MODULES ACADEMIC YEAR 2011/2012

Code	week(s)	Name	Lecturer(s)
Ideas and Concepts			Bruns Alonso
DB106	1	Be your own System	Tomico Plasencia, Frens
DB108	1	Designing Open Innovation Spaces	Tomico Plasencia, Lu
DB110	2	Glow	Overbeeke, Ross
DB111	1	Design for Intersubjectivity through Haptics	Kuennen, Stienstra
Integrating Technology			Ahn
DB201	1	Modelling and Specification in Action	Hu, Feijs, Ross
DB204	1	Autonomous Behaviour	Ahn
DB211	1	Mechanical Design and Engineering	Delbressine
DB212	4	Lego beyond Toys	Delbressine
DB213	2	Remediating Media	Németh
DB214	1	Sense your Heart	Bambang Oetomo, Feijs, Chen, Hu, Langereis, Van den Boomen
User Focus and Perspective			Terken
DB304	1	Mental Models in Users	Terken
DB305	1	Persuasive Technology	Van Essen, Bekker
DB310	1	Interaction Design and Children	Markopoulos, Bekker
DB313	4	Designing for the User Experience	Eggen, Terken
Socio-cultural Awareness			Brombacher
DB411	1	Intercultural Markers in the Design Process	Bruns Alonso, Tomico Plasencia, Kint
DB412	2	Creating a New Society	Hummels, Trotto
DB413	2	Experiential Design Landscapes	Brombacher, Peeters, Megens
DB415	1	The Human Adventure	Kint, Frens
Business Process Design			Brombacher
DB507	2	The Strategic Value of Design	Snelders
DB509	2	Designing Out Crime	Luyk
DB511	1	Can you help Mr. Van Putten	Lu, Tomico Plasencia
DB512	1	Exploring the Business Landscape	Lu, Hummels, Baha
DB513	1	Experience Flow Modeling	Alblas
Form and Senses			Bruns Alonso
DB610	1	From Movement to Mechanism	Hummels, Frens
DB611	2	From Sketch to 3D and Back	Reindl, Hengeveld
DB617	1	Sensual Dynamics	Deckers, Lévy
Teamwork and Communication			Snelders
DBA02	1	Writing a Scientific Paper	
DBA03	1	External Learning Activities for ID	
Design and Research Processes			Rauterberg
DBB03	1	Qualitative Research Methods	Markopoulos
DBB07	2	DQI Theory	Lévy, Bruns Alonso
		Self-Directed and Continuous Learning	Markopoulos

Descriptive and Mathematical Modelling			Bernard
DBD02	1	1,6180339 The Golden Ratio	Feijs, Hu
DBD03	1	Multidimensional Scaling	Martens
DBD04	2	Learning Robots	Barakova
DBD05	2	Complex Sensors	Martens

8: WORKSHOPS ACADEMIC YEAR 2011/2012

Offered by the Education and Student Service Center (STU)

- DJC01 Workshop: Planning and Setting goals
- DJC03 Workshop: Meeting Skills
- DJC04 Workshop: Writing your Report
- DJC05 Workshop: Pitching your Project
- DJC06 Workshop: Group Dynamics & Peer Review

Offered by TU Eindhoven Library

- DJC07 Information Brokering

Offered by Industrial Design

- DJD02 Workshop: Basic Electronic Skills
- DJD03 Workshop: Quick Start Arduino
- DJD04 Workshop: Sensors and Actuators, basics
- DJD05 Workshop: Getting started with Processing
- DJD06 Workshop: Rapid Prototyping

9: SELF DIRECTED LEARNING (SDL) ACTIVITY WEEK

What is an SDL? The SDL weeks are an opportunity and challenge to break away from prescribed processes by the department and define your own activities that serve your personal development goals. We hope it gives you the opportunity to reflect, to go deeper in aspects of design that interest you, to complement your current learning activities, or that you will engage in something that motivates you to push against your own boundaries. SDLs have done so successfully in the past, before there was a fixed slot for them in the yearly schedule: ‘bikkelweek’, workshops, excursions, participating in design competitions, setting up a ‘module’ to fit your needs, writing research papers, etc.

Who defines SDL’s? Each student is encouraged to define their own SDLs. Students can also team up to define a joint activity or they may choose to participate in an activity another student has set up. As ID Education, we shall not propose any activities, neither shall we monitor, limit, or constrain who proposes activities. If anything, we underline that the intention for these weeks is not for staff to propose an assignment or module under the guise of an SDL and not for them to be simply used as project weeks.

What activities are acceptable as SDL’s? There are trivial ways to fill the time that we do not endorse. For example, spending the time at an exhibition as a casual visitor, temporary work vaguely related to design, reading a book, etc. While these things can be nice side activities during the year (and also during the SDL weeks) they do not represent a distinct and substantial effort to justify three weeks of your time. Rather, we expect a more active involvement, and a deliberate choice of activities that can demonstrably lead to growth along our 10 competences and should account convincingly for the allocated time.

Who is responsible for the content? Students are responsible for coming up with a plan fitting their interests and personal development plan. They are also expected to address comments/advice they receive from their competence coach, in order to ensure that the planned activity offers appropriate opportunity for growth. The competence coach is the final responsible person for whether an SDL proposed by the student fulfils its educational purpose, and for providing relevant and timely feedback to the student when the activity is being defined. There are no content or other related rules/constraints. It is up to the competence coach to verify whether there is a match with the learning objectives set by the students that the plan ensures growth along the competences we work with, and that the amount of work planned justifies the investment of three weeks.

Reflection, but no separate assessment At the end of the SDL-weeks, students are expected to write a reflection on their activities and learning. This will not be assessed separately; the assessor at the end of the semester will evaluate the overall growth of the student rather than assess each activity separately.

No coach involvement During SDL weeks, the default case is that students work independently from their coaches. Discussions, reflections and feedback regarding the competence development can be the topic of regular competence meetings after the SDL-weeks.

Timing Students and their competence coaches must have agreed on a plan of the activities for the SDL weeks before they start. For the first SDL-weeks this means a deadline on Friday, October 14. This means that the student should present a plan much sooner and seek feedback from the coach for potential adjustments; it is actually much more sensible to aim to have this plan ready before the midterm exhibition. If by Oct 14, the student has not managed to propose a set of activities that the competence coach approves, then the fall back (and not preferred) option is to spend the allocated time on the regular project. This is for avoiding the situation that three weeks are spent deliberating what to do.

Organization To facilitate cooperation amongst students we will provide a way of sharing activities so you can simply organize an activity with others. Or you can see and find activities you can participate in. Henri in 't Groen will be coordinating all issues regarding the SDL-weeks. To help the formation of the SDL activities, and to trigger your thinking two information sessions were held. Here you can find the presentation, which includes a few examples of good SDL's

10: INTERNATIONAL COLLABORATIONS

University	Country	Location	Type agreement
University of Technology Sydney	Australia	Sydney	MOU & student exchange
Macquarie University	Australia	Sydney	MOU
Royal Melbourne Institute of Technology	Australia	Melbourne	MOU
Universiteit Gent	Belgie	Gent	Bilateral agreement
University of British Columbia	Canada	Vancouver	MOU
Jiangnan University	China	Wuxi	
Zhejiang University	China	Hangzhou	MOU
Cyprus University of Technology	Cyprus	Limassol	Bilateral agreement
Danmark Designskole	Denmark	Kopenhagen	Bilateral agreement
Aalborg Universitet	Denmark	Aalborg	Bilateral agreement
University of Southern Denmark	Denmark	Sonderborg	Bilateral agreement
Aarhus University	Denmark	Aarhus	
Aalto University	Finland	Helsinki	Bilateral agreement
Helsinki University of Technology	Finland	Helsinki	Bilateral agreement
Laurea University of Applied Science	Finland	Espoo	
Universite de Technologie de Compiegne	France	Compiegne	Bilateral agreement
Glasgow School of Art	Great Britain	Glasgow	Bilateral agreement
University of Surrey	Great Britain	Surrey	Bilateral agreement
University of Patras	Greece	Patras	Bilateral agreement
University of the Aegean	Greece	Syros	Bilateral agreement
Hellenic Open University	Greece	Patras	
Budapest University of Technology and Economics	Hungary	Budapest	Bilateral agreement
Universita Degli studi di Firenze	Italy	Florence	Bilateral agreement
Politecnico di Milano	Italy	Milaan	Bilateral agreement
Universita degli Studi di Siena	Italy	Siena	Bilateral agreement
University of Udine	Italy	Udine	Bilateral agreement
Universita luav di Venezia	Italy	Venice	Bilateral agreement
Universita degli studi di Sassari	Italy	Sassari	Bilateral agreement
Keio	Japan	Tokyo	MOU
Chiba University	Japan	Chiba	MOU
Tsukuba university	Japan	Tsukuba	MOU
Universiti Teknologi Mara	Malaysia	Kuala Lumpur	MOU
Victoria University of Wellington	New Zealand	Wellington	MOU
NUS	Singapore	Singapore	MOU
KTH - Royal Institute of Technology	Sweden	Stockholm	Bilateral agreement
Umea University	Sweden	Umea	Bilateral agreement
University of Applied Sciences Western Switzerland (HES-SO)	Switzerland	Délémont	Bilateral agreement
NTUST	Taiwan	Taipei	MOU
Middle East Technical University	Turkey	Ankara	Bilateral agreement
Georgia Institute of Technology	USA	Atlanta/Savannah	Bilateral agreement
Carnegie Mellon University	USA	Pittsburgh	MOU
Ecole de Nantes	France	Nantes	Bilateral agreement
NTU	Singapore	Singapore	

11: ACTIVITIES AND WORKSHOPS ORGANIZED BY LUCID

- General activities**
- IDBate, know more about the Bachelor College and share your opinion on it with fellow students, intended dean Lex Lemmens, our director of education Panos Markopoulos or task force member Berry Eggen
 - Introduction to new 1st year students
 - Lustrum Symposium, Lectures by Marieke Sonneveld, IO TUDelft; Emar Vegt, PhD candidate at BMW; Ryan Bahadoer, LN2 and Adam Tasi, director of Smartnose.
 - Parentsday, To show to the parents what their students are doing and learning on the department
 - Portfolio Day, visit the studio of VanBerlo and get feedback on their portfolio
 - UNiD, A magazine for and by students
 - What To Do After Your Bachelor ATM, A dinner with experts to figure out what to do after your bachelor
- Events during DDW**
- DesignLab, a week full of activities for the Dutch Design Week
 - Design Drive, A ride through the DDW
 - DDDWDD, De Dutch Design Week Draait Door. For five nights, the show was shot with a live audience and broadcasted directly on Internet
- Festivals**
- Arts & Crafts Day
 - FSE Food Design
 - Industrial Design Experience Market
 - Mooi Helder Festival, students will show the citizens of Eindhoven what Industrial Design is and how we can help the society with design.
 - NOW, inspiring weekend in Enschede full of design cases, workshops and lectures.
 - NS-Try out festival, workshops, two fantastic projects and our very own lucid design team, who took the challenge to design several objects using waste material of the NS.
- Events involving companies**
- Brabant Academy Event
 - Callock Design Case, a design case with Callock, a company that provides a bike-rental service.
 - DSM Brainstorm
 - NAM Case, a case in cooperation with the NAM

- Design Competition China, Philips Design Challenge, compete and work with Chinese design students from Zhejiang University in Hangzhou
- SMAAC Brainstorms, 4 times a year, ID-students can try out their brainstorming skills at SMAAC

Study trips

- City Trip Essen
- City Trip Gent
- City-trip Frankfurt
- City Trip Bruges
- Milano Trip
- Oslo Study trip
- Trip to Germany, to museum MARTa Herford and a visit to the Centre for Light Art Unna.
- Visit to TechTextil

Workshops

- Adobe Illustrator Workshop
- Advanced Photoshop Workshop
- Body Language Workshop
- Film Workshop
- Flash Workshop
- Graphic Design Workshop
- Indesign Workshop
- Photography Workshop, Outdoor, Product, Retouching and exposition
- Pitching Workshop
- Stand Design Workshop
- Solidworks Workshop
- Vocal Workshop

12: BOOK SALES BY LUCID

1. Adobe Creative Suite 4 Design Premium - J.E.A. Smith
2. Ambient Lifestyle - E. Aarts
3. Art of Innovation - Tom Kelley
4. Basic Product Design - D. Bramston
5. Biomimicry - J. Benyus
6. Business Model Generation - Alexander Osterwalder
7. Calculus - R.T. Smith
8. Change By Design - Tim Brown
9. Cradle to Cradle - William McDonough
10. Cultures and Organizations - Geert Hofstede
11. Design Driven Innovation - R. Verganti
12. Design Research through Practice - I. Koskinen
13. Design research: Methods and Perspectives - B. Laurel
14. Design Studies - H. Clark; D. Brody
15. Design, the history, theory and practice - B.E. Burdek
16. Elements of Mechanical Design - James G. Skakoon
17. Emotional Design - Donald A. Norman
18. Ethics, Technology, and Engineering - Wiley-Blackwell
19. Exploring materials creative design - I. Alesina
20. Fashionable Technology - S. Seymour
21. Getting started in Electronics - M. Forest
22. Indie Publishing - Ellen Lupton
23. Information is Beautiful - D. MCCandless
24. Interaction Design - Y. Rogers
25. Learning Processing - D. Shiffman
26. Life's a Pitch - S. Bayleys
27. Living with Complexity - D.A. Norman
28. Making Things talk - T. Igoe
29. Manufacturing Processes for Design - R. Thompson
30. Materials and Design - M Ashby; K. Johnson

31. Rework - Jason Fried
32. Riding Chaos - H. d'Achard
33. Seductive Interaction Design - S.P. Anderson
34. Seductive web design - A.P. Anderson
35. Sketching - Roselien Stuer
36. Sketching the Basics - K. Eissen
37. Sketching User Experiences - B. Buxton
38. Ten faces of Innovation - T. Kelley
39. The Art of Innovation - Thomas Kelley
40. The craftsman - R. Sennett
41. The design of future things - Donald A. Norman
42. The Laws of Simplicity - J. Maeda
43. Thinkertoys - M. Michalko
44. This is service design thinking - M. Stickdorn
45. Understanding Design - K. Dorst
46. Universal principles of design - W. Lidwell
47. University Physics - Hugh D. Young

13: REFLECTIONS BY EDUCATORS

Sander Mulder,
reflection on
the role of
Competence
Coach

A short text with my personal reflections from within my role as competence coach. My experience is that the competence framework gradually dissolves throughout the educational career of a student at ID as the separation of competences is arbitrary and not reflected in the daily practice of a designer nor in his or her self-directed learning process.

Having said this, my experience is that the competence framework has a purpose and should be maintained and further refined. It serves to clarify a zone of proximal development – in terms of Vygotsky – allowing coach and student to co-create meaning. Competence coaching also allows students to be the more knowledgeable other in terms of Vygotsky, as a coach rarely has adequate expertise in all competences. This serves the social interaction process within the ID community.

Furthermore the competence framework helps students to navigate towards expertise within our faculty and beyond. This is helpful for students, as expert questions are per definition hard to be elicited by non-experts, let alone that a non-expert is able to find relevant sources. In that respect the ‘language’ we created with the competence framework helps the ID community to relate to the variety of fields influencing our profession, education and research. This language needs refinement as said above.

Additional to the above: Stelter defines the role of a coach in a learning process as a facilitator of dialogue that unravels the current view of reality of the focus person — the person that is coached. ‘New realities and new narratives are formed by the focus person together with the coach through their conversation and co-creation of meaning’. Potential meaning or value can be conveyed through what Vygotsky calls mediating signs as indicated by Lewis: ‘the tools we build to mediate [...] activities change the ways humans think’.

In the portfolio I developed for the University Teaching Qualification (BKO) of the 3TU Federation I describe interaction with a student that illustrates the core of competence coaching from my perspective. I coached student M. in the semester February-June 2011 and I wrote a.o. this coach feedback:

‘You are able to synthesize and concretize your thoughts but you are somewhat reluctant to do it as it is so definite. At least that is my interpretation as your coach. Preferably you like to circle around an issue and approach it from many viewpoints and then ‘tsssk’ manifest it in an artefact just like that. In reality it takes a bit more blood, sweat and tears to get to tangible stuff. Try to develop this activity as you’ll learn from materializing your thoughts as well.’

M. had another coach in the subsequent semester September-December 2011 and was assessed in January 2012. Right after the January assessment M. asked me to reflect again with him on my coaching feedback in June 2011:

‘...could we meet, drink a cup of coffee, and discuss your coach feedback of June 2011 again. I think that what you wrote then is exactly what went wrong in the current semester. I’d like to collect ideas with you how to tackle this issue...’

We co-created meaning again in January 2012 looking back on more than a year of education and we developed new potential approaches to the issues I addressed earlier on. Apparently the ‘value-in-use’ was only determined by the student one semester later. My intention of course was that M. would work on this earlier on, but the urgency for M. became more apparent after half a year.

I approach teaching as a service to students and it is my role to support their value creation process. Similarly, I approach teaching as a meaning creation process. Teaching is a service where the value can only be assessed in-use by the student through interaction. As beneficiaries students co-create their own value since they determine what is of value. Phrased differently, I co-create experiential interaction, where I suggest purposeful intent between me and students. It suggests inclusiveness of the student, student to teacher and beyond, from dyadic relations to systemically complex.

The value of my teaching is uniquely and phenomenologically determined by the beneficiary, namely the student. This makes me a currently relativist in the ontological discourse, though I’m currently investigating post-structuralist philosophy in order to rethink constructivist learning and design theory.

**Tilde Bekker,
reflection on the
role of Project
Coach**

Teaching context: One main challenge in coaching master design projects is in balancing coaching in providing input and helping the student managing their self-directed learning process. When should I provide more directive information or answers, and when should I let them discover their own path? Looking back at how I have coached different students

³ In addition to Vygotsky’s Thought and Language, the online knowledge base www.learning-theories.com has been accessed on Vygotsky’s learning theorie, dated 2nd April 2012; see also Vygotsky, L. 1986. Thought and Language. Cambridge, MA, USA.: MIT Press.

⁴ Stelter, R. 2007. ‘Coaching: A process of personal and social meaning making.’ International Coaching Psychology Review, 2:2, 191-201.

⁵ Lewis, S., Pea, R. & Rosen, J. 2010. ‘Beyond participation to co-creation of meaning: mobile social media in generative learning communities.’ Social Science Information Sur Les Sciences Sociales, 49:3, 351-69.

I realize I have a tendency to provide less freedom to students, or be more directive after I have coached a student that had trouble with managing his/her project. However, providing more structure is not necessarily a solution for this. Providing more input for reflection about this may be a better solution within the self-directed learning approach, helping them think about their learning goals, but also the learning activities they choose, and whether the products allows them (and me) to judge their learning outcomes. For example, what kind of prototype is required for gathering information for their process, and developing the right competence.

Whether learning objectives have been met: I provide insight into learning objectives at various points in time: explain at project market, when selecting, already discuss learning opportunities, this is also done in the first start-up coach meeting with multiple students discuss variations of project, discuss variations in planning depending on learning goals, and come back to it in subsequent coach meetings. I will reflect on how I coach students helping them to reach the learning objectives. Students are helped in tailoring their goals to their own needs, but also through discussing their Personal Development Plan (PDP). They are also helped in checking during the semester whether they are on track and whether they have to adjust their goals and planning. Overall, by helping students with this process throughout the semester ensures that most students reach the learning objectives to a certain extend. For example, they may shift more ambitious learning goals about design research to less ambitious goals, if they have a set-back for example in creating their prototype needed for a study.

Use learning objectives to select appropriate learning activities: I do co-coaching (in this case with Mark de Graaf) and discussions with other students, and I do interventions if progress falls short. I will reflect on how I adjust teaching strategy and design activities to the working and learning style of the students. Some are very proactive themselves and need less help and interventions. Others need more help in making decisions and combining design with keeping track of the planning and optimizing design approach: I help to reflect on this process and if necessary look for learning activities. Some have trouble keeping balance between project goals and competence development goals: then I focus more on this aspect of reflection in project meetings.

The role of teacher and supervision process: I will reflect on how I adjust feedback style to student style. Some, e.g. who are insecure, are more in need of motivational coaching, others, e.g. who have trouble taking responsibility for their own work and approach, are

⁶ A relativist approach is the basis of the constructivist paradigm that posits that learning is an active, constructive process. The learner is an information constructor. Students actively construct or create their own subjective representations of their reality. New information is linked to prior knowledge, thus mental representations are subjective.

more in need of very direct and confrontational feedback. Students that are very proactive themselves can be coached in by discussing progress, being a devil's advocate and by sometimes joining in specific activities, such as setting up studies.

**Sidarto Bambang
Oetomo,
reflections on the
role of Client**

During their work on a project the students of the Department of Industrial Design are supervised by a coach and assessed at the end of the project. When indicated the students use a "client" as specialist in the field that can provide details of the product that has to be designed and can highlight the context of the product.

Since 2008 I performed the role of client as pediatrician-neonatologist in Máxima Medical Center in Veldhoven. I presented clinical issues to the students and invited them to discuss the project with the nurses of the neonatal intensive care unit. If possible and indicated I could arrange meetings for the students with parents of patients.

The positive points that I encountered: The students are genuinely interested and could formulate relevant questions to me as the client. The students listen very good to the client, nurses and parents and are able to select the information that is necessary to perform their project adequately.

Point for improvement: I would like to be consulted more frequently during the project. Mostly I see the students at the start and then only once more in the first phase of the project. When there would be another meeting point after 6 weeks then there is still a possibility to advise and correct the students if necessary.

Sometimes I have the feeling that at the end there is not enough time for the students for important iteration.

**Oscar Tomico,
reflection on the
role of Assignor**

I see design action as a driving force for transformation, a generator of knowledge, inherently personal, but at the same time as a situated action in society, part of the existing social structures, done in the wild, constrained and inspired by the context. The concept of being there is what interests me as a design researcher. I find really important to take a first person perspective during the design process. Learning to trust your intuition, using your senses and get inspired by the context for me is really valuable for design practice. Thus, my education efforts focus on situated design practices (contextualizing the design action in the place it will be used) and developing the skills needed for that (empathy, openness, being explorative, reflection on action, being applied). I teach this in the co-reflection assignment.

Confronting designers' rationale with society is key to reflect on the design space and reformulate design opportunities. Co-reflection sessions focus specifically on that and what's more important, they serve as a learning framework for design students. The skills they learn by preparing, running, documenting and analyzing the co-reflection sessions make them more critical to the ecological validity and, more specifically, the personal

receptiveness of any kind of workshop, user involvement, or creative session they are involved in. Co-reflection sessions help students to question themselves about the room for exploration and reflection the participants have, if they give enough information to interpret what's happening, how strongly the session connects to participants lives, how realistic the sessions are, and if participants create an overall image of what happened. Moreover, by following multiple iterations they are able to reflect on the implications of the ecological validity and personal receptiveness of their sessions on their design process.

The assignment focuses on the development of co-reflection sessions applied to multiple stakeholders, experts, and users or between designers. The students developed and ran the sessions as part of the co-reflection assignment (6 days of work, one day a week) but the contexts of application were their own half-year design projects. That means that the sessions were part of a real design process instead of a controlled activity and they had to develop them according to their project needs with real stakeholders, experts and real users (to ensure the most realistic setting). In order to keep the multiple contexts of application, support group reflection and have personal feedback it is important that the students team up in small groups. After the first session the students make groups based on the nature of the challenges of developing co-reflection sessions in their projects.

Class hours combine theory, hands on exercises, presentations and discussion in an iterative manner, increasing the level of depth as the assignment develops. Students reflect on each iteration based on the set of questions developed based on personal receptiveness between the participants and the designer (themselves). They use them as a quality check supported with video excerpts relating to good and bad practices from the sessions they do. The deliverables consists of photos and videos of the co-reflection sessions (selection of parts showing good and bad practices based on a structured reflection); a report including aim, proposed methodology, results (proposed design space), and reflections based on the personal receptiveness questions from their own co-reflective sessions (a table comprising reflections on the 3 iterations).

***Yuan Lu,
reflection on the
role of Lecturer for
a Module***

Since 2008 I started to teach at Industrial Design including providing master modules in the area of business process design. I will shortly reflect my teaching experience at ID from the design, execution and evaluation of the master module.

Although I was very new to the competence centered learning education approach, I quickly realized that the set up of the master module required a lot of skills from organizing workshops. An open learning environment needs to be created in the module where students can learn in their own way. I should be a facilitator than a classical teacher who knows almost everything. My earlier teaching experiences in giving workshops and teaching in Design Oriented Education ('Ontwerp Gericht Opleiding') was very useful for me to start teaching activities in this new context.

What I still need to bear in mind is the level of control that I was practicing. In a more theoretical driven learning system, students follow the learning structures and objectives offered to them. It is necessary to, to a certain extent, “freeze” the design of the education activities already to support the students making selection among different courses. In a more experiential and student driven and competence centered learning system at ID, students need to make their own growth plan according to the competence framework provided by the department. In stead of “freezing” the design of the education activities, a level of flexibility needs to be developed in the education activities to react to the different individual learning situation. It also implies that the assignor needs to shift from the control mind to a more responsive mind, not just telling what she or he thinks that the students have to learn but stimulate them to discover what they need to learn, encourage them to explore, to act and to reflect. To be able to provide quality education in competence centered learning education model, the lecturers need to teach and work with the students together, in situ, be part of the competence centered learning system. The required education skills, knowledge and attitude can only be obtained when the lecturers are really doing it, i.e., learning by doing and reflection. The challenge for me lies most of the time in the involvement of industrial partners in the model.

To provide an experiential learning environment for ID students to learn business process design, it is essential that experts from industrial companies can join them and provide valuable feedback to them. It implies that I also need to explain our education approach to our industrial partners. Till now I have managed to get industrial partners on board and they were impressed and inspired by our system and is willing to reframe their questions and challenges towards our students to co-facilitate the learning process of students. I have to admit that this is a time consuming process and sometimes a few iterations are needed to get final confirmation. To balance research and education time and integrate research into education, I learned to integrate PhD research process into master modules. In this way, I could conduct research case studies while teaching master module. A number of papers were published based on earlier module results.

At ID qualitative feedback is used to evaluate the results of the module for each individual student. How to give feedbacks that are clear, well founded and actionable to support the continuous learning of students is a must competence for teaching in ID. From my own experience, I think a two-level feedback approach is very appropriate. On micro level, timely feedback during the learning activities serves as an early signal/warning and encourages continuous learning within the learning activities. On macro level, the final feedback at the end of the learning activities serves as an overview of the learning process of the students and provides them materials for further reflection and improvement.

In short, I really enjoy teaching modules at ID. I will continuously practice and reflect on how to really provide high quality competence based learning module to our students everyday from closely working with our students and industrial partners.

Chet Bangaru,
*reflections on the
role as Expert*

I started working at the TU/e in 2007. My job is to help the Master students and the researchers to make their prototypes. I have a background in mechanical engineering. One of my passions are machines and robots. I learned to work with almost all manufacturing machines. The last 10 years I focus more on the digitally manufacturing technology. I also have a broad experience with shaping and forming different materials.

In the last seven years I have had the chance to build a workshop in which the students can explore the worth of their concepts. Assisting the students with an open mind, encouraging them to take a step further, is probably the most rewarding part of my work. Of course this is a technical endeavour in which I can hand them my skills. Skills that I have thanks to working experience in mechanics, crafting wood, teaching and prototyping. Especially the mix of skills is a source of invaluable advice for the ID faculty of TU/e.

I have learned on the TU/e that students search for affirmative guidance. Guidance in how to approach conceptual designing and in how social interaction works. I think this faculty is an inspirational environment to learn, work and to reflect on your work. I noticed this when I was abroad in Turkey. We did a workshop about rituals. How people and culture live with this rituals and how this is embedded in their daily life. I also did a lecture about my work at the TU. I explained how we work with the students and also how our education system works. Competence Base Learning:

When I explain this at the Turkish students they where all flabbergasted about our system. I personally think that this system is the only system to break away the old boundaries of hierarchies and personal ego. And also the most important one, to give the student the feeling that there not also a student but also human being with their personal live. I use this approach also with my students in Eindhoven. I know that they are thankful and grateful for my approach and my help because they always thank me or put my name in an acknowledgement in there thesis. And I am proud to be part of their education.

For the future I hope to get all the different labs we have on the faculty in one space. Our faculty need this to let the students see from each other what they are making. This space will be the place where students can work and share their ideas. I always believe that the places where people make things are the places where everything comes together; technology, concept, ideas, iterations all done by doing and for finalizing their concept they have to MAKE. In this space/atelier they can easily share technology and knowledge. And if they are used to share their knowledge they will also learn to do this outside the university.

Jacques Terken,
*reflections on the
role of Assessor*

I've been involved in student assessments within the department for over ten years now. It took some time to get skilled in assessing students, but ID Education proved helpful guidelines for how to do assessments and what to address in assessment reports, although throughout the years I kept having trouble with the notion of "Overall growth as a designer", as in my opinion this notion is ill-defined.

In the beginning one of the main inputs to the assessment was the Self Evaluation form, which had a clear structure but was largely text-based (although students were expected to include links to evidence supporting their claims about achievements, giving access to visual materials as well). A big change was the transition to the Showcase as a main input to the assessment, giving much more freedom (or put more negatively: providing much less structure) to students as to how to present their progress and reflections. To most students, it turned out to be fully unclear that the primary goal of the self-evaluation is to reflect on their progress, supporting these reflections with evidence taken from their projects, assignments/modules and extra-curricular activities. Usually, the connection between reflections on competence development and evidence is very weak, suggesting that students miss the insight that projects, assignments/modules and extra-curricular activities are only means to develop themselves.

Other changes that have affected the assessment process were: (+) the introduction of assessment talks at the exhibition and after the inspection of the showcase as essential elements of the assessment procedure, providing opportunities to get an impression of the attitude and the passion of students; (+) a better understanding about the focus of the assessment (from a focus on the development of individual competences at the B1 level to a focus on integration of competences at the B2 and B3 levels to a focus on the relation between vision/identity and the (self-directed) development in the Master program. This change has not yet been finalized and is still under discussion. What I find difficult to see here is how levels of development can be defined for things such as 'vision/identity' and 'relation between vision/identity and the (self-directed) development'. Is this binary or gradual, and if gradual, how can we decide what is satisfactory at an M11 level but not at an M12 level? If we apply the level of progress of students as a criterion for the assessment, we should at least be able to describe what to expect at different levels of development. I myself find it hard to do so at the moment. (-) The introduction of new assessment forms (for me resulting in a mental state of depression around the period of the assessment), (-) The reduction of the size of assessment panels (or the elimination of panels) for B32 and up. As a result, in my opinion we are less able to evaluate the level of development for the different areas.

A final element of the assessment procedure is the plenary assessment meeting. Although it's often said that this is the place where we can calibrate our private assessment criteria, I believe that this is mainly true for beginning assessors. In my opinion, for more experienced assessors the plenary assessment meetings usually have little added value over the consultation between assessor and coach about the assessment verdicts (another important element of the assessment procedure).

In sum, although in my experience I usually agree with the coach about the verdict for a student (which might be taken as evidence of a sound process), I feel that the verdict often arises in a rather implicit manner and the arguments are provided as a justification afterwards, instead of being the other way around. Although this may be fully in line with

theories about how people come to certain decisions, it makes me feel uncomfortable about the quality of my assessment process.

***Maarten Versteeg,
reflections on the
role of Theme
Champ***

The role of Theme Champ has been established in 2008 together with the Themes without a fixed function description. This gave me the motivating freedom to put my own emphases. My main drivers have been:

1. Building a community. I tried to know all students in the theme and motivate them to get the most out of themselves. We have always involved students as much as possible in the development of the theme. With the development of the theme in mind I actively scout good students and invite them to projects.

The same goes for the staff. We consciously organize staff-days (e.g. visiting – and working in the workshops of the freelance coaches). Moreover we use to recruit freelancers ourselves instead of ‘just’ choosing from the coach-pool.

2. I try to be a mediator between the students/staff and the organization, both on a strategic and executing level. Example of the latter: I had a leading role in the development of a new student allocation procedure.
3. Content-wise I try to keep coherence and balance in the different topics that are worked on within the theme. Since I’m a freelancer, I’m not involved in one of the capacity groups. This enables me to function as an independent chairman.

Over the past years:

4. The theme has grown immensely
5. Research in the context of the theme became increasingly important
6. The system is more and more top-down formalized

These changes have changed the role enormously.

Bart Hengeveld,
reflection on
the role of
Competence
Responsible

Coordinating competences 1 and 6

Between April 2009 and July 2010 I was responsible for coordinating Competences (CA) 1 and 6: “Ideas and Concepts” and “Form and Senses”, respectively. In this document I reflect on my role at the time, on my activities and on the organization. In addition I provide recommendations for future competence coordinators (CCs).

My role

In 2009 I took on the role of competence coordinator for CA 1 and 6: “Ideas and Concepts” and “Form and Senses”. The role involved, but was not limited to:

- Evaluating. Evaluating the available learning activities within the two CAs, both on the level of individual assignments, as well as relative to the overall purpose of the competence;
- Improving. Improving existing learning activities with the teachers, where opportune;
- Envisioning. Setting out the direction of the CAs, with an eye towards the future.
- Coordinating. I had many conversations with ID Education (mostly Marjolein Ruijs) to coordinate the offer of learning activities, often steered by the necessary number of ‘seats’.

My role was characterized by communication; I did not have the authority for personnel management. This authority lay with the Director of Education (DoE).

My activities

Creating overview in order to map out skills and knowledge.

I talked a lot. Firstly, with all assignors and module lecturers for various reasons: not only for understanding what their learning activity was about in the first place, but also for being able to put them in the bigger picture of the CA. Having spoken with all assignors and module lectures I made a mapping of the skills and knowledge offered per CA and reflected on this in order to identify overlap and gaps.

Setting up a new drawing class.

I spent much time on giving form to a new drawing course for ID students. I was dissatisfied with the classic drawing courses offered by the Architecture department as they did not fit the needs of our students. Based on my own experience as a design student and after that, my experience as a practicing designer outside academia, I felt the need for a more pragmatic drawing course. This course should be based on sketching and an opportunistic—in the most positive sense of the word—use of new media. For achieving this I spent much time discussing options with the existing staff and looked for opportunities with our DoE.

Evaluating and redesigning learning activities.

Based on recurring course evaluations I discussed the learning activities of/with the responsible assignors and lecturers. In a few cases the consequence of the discussion was that a learning activity had to be eliminated or thoroughly redesigned, for example when only a handful of students enrolled in them, for one or two runs in a row. In these cases I sat together with the responsible teacher(s) and discussed options.

Coordinating with ID Education.

I had many points of interaction with Marjolein Ruijs of ID Education, discussing the learning activities on offer, how well they performed and when they should be offered. This often resulted in me contacting the responsible teacher(s) for coordination.

Reflection

I found my time as CC satisfying, mostly since it allowed me to contribute to the content and quality of our education. Talking with all involved assignors and lecturers not only gave me insight in their visions on their work, but also provided me with alternative perspectives on our educational system and curriculum. As such, it helped me shape my vision on the two CAs. I should note though that CA1 (Ideas and Concepts) was more difficult to shape than CA6 (Form and Senses), as CA1 is a Competence that borders on a meta-competence level: generating, selecting and refining ideas and concepts is typically an activity that takes place across the whole design process, in different incarnations. Consequently, the learning activities on offer in this CA were at the time quite scattered and incoherent. I spent much effort on getting grip on the different faces of Ideas and Concepts and finding a way to provide a coherent set of learning activities, without sacrificing the CA's interesting multifacetedness.

The activity that was most satisfying and frustrating at the same time, was my effort to tune our drawing assignments better to the type of education our students need. I spent a lot of time discussing teaching strategies with the drawing teachers at the Architecture Department of TU/e, and was pivotal in changing the course towards a more pragmatic, sketch-based one, attracting people such as Jan Selen and Wouter Boog. This was the satisfying bit. The frustrating aspects were my extensive talks with some of the drawing assignors, whom in my view were either too stubborn, or simply had the wrong background and should not have been hired in the first place. ID should have had more control over who would teach our students (considering that we pay their salaries).

What did not help me here was the fact that I did not have any authority. On the one hand this made that I could emphasize the 'content' side of my role, especially during my talks with assignors and lecturers, allowing them to talk freely and passionately about their ideas. On the other hand though, this lack of authority made it difficult to have 'bad news talks' with assignors whose assignments underperformed. Especially in cases where the assignor in question was stubborn or difficult to convince, it would have helped me to be—as my colleague Pierre Lévy likes to call it—a bit more dangerous. On several

occasions I had to shunt responsibilities to the DoE, which I do not like to do when I am negotiating. I prefer being clear about what I expect, without simply being ‘the messenger’, or perceived as such. I am sorry to say that the fact that I was ‘only’ a doctoral candidate and assistant, associate or full professor did not help either.

Another aspect that made me feel uneasy due to my lack of authority was the tenure of external teachers. I was often told that these teachers, valuable though they are, were also very expensive. This impacted my activity of envisioning the course of the CAs, plus created the uneasy situation that I was potentially deciding over people’s jobs without feeling authorized to do so. Especially when I had just started and was still getting grip on the CAs this felt awkward.

Wrapping up

In general I found my time as CC very satisfying, mostly, as I said, due to the feeling it gave me of contributing to the quality of our education. Towards the future I would recommend though to give clear authority to the CC as this will make his or her job easier; it provides leverage. This has as a consequence that doctoral candidates should not be CC. I also recommend reconsidering CA1, Ideas and Concepts, as this is a strange one relative to the other CAs. This reconsideration should lay with the CC, in conjunction with the DoE. I do want to stress though that the CC should have quite some autonomy, as this will make his or her job not only easier, but also more satisfying. I believe that we should all trust each other as professionals having the department’s best interest at heart.

René Ahn,
reflection on
the role of
Competence
Responsible

I joined the Board of Examiners in October 2005, and have been active in education as an assignor, a coach, an assessor, as well as an expert and a module organizer.

I have a technical background, (I have a Masters degree in physics and have a PhD in logic and computer science) and when I joined the faculty I mainly dealt with Bachelor students. I observed that the demands put on the students were high and diverse, and that it was difficult for them to gain sufficient depth in all relevant competences. In the beginning, given my background, I had a tendency to see design as a form of problem solving, and was particularly focused on the formal aspects, and wondered whether students would be able to acquire the necessary depth of technical knowledge as well as proper research and argumentation skills.

Later, I realized that designers operate as nodes in a network of multiple stakeholders, and need interfaces to talk to different types of ‘peers’. Peers can be clients, investors, scientists, engineers or even health professionals. They also (and perhaps most importantly) need the skills and the motivation to really ‘get into’ the heart of a situation, to be able to develop innovative systems or concepts that meet the needs of users given the various constraints and possibilities that arise. In each situation, which is always new, various Social, Cultural, Aesthetical, Ergonomical, Technical, Financial and manufacturing factors all need to be balanced and taken into account.

This is a complicated and unpredictable process that requires designers to incorporate various viewpoints and to adapt to the ever-changing characteristics of a new design situation. There is no fixed skill set that can prepare them for this, so it is crucial that the designers have learned how they can gain an appropriate understanding of new situations, whether this involves new technologies, new social sensitivities, new marketing models, or new manufacturing technologies. They need to be able to make the necessary contacts, identify the essentials of a situation, and acquire the needed knowledge and skills that enable them to make the difference in this situation. This requires a thorough understanding of the basic aspects of the design process as reflected in the various competences. Above all, students need to adopt a proactive attitude, and a willingness to step outside their comfort zone to widen the scope of their skills, knowledge and vision.

The advantage of this approach is that it challenges the students, and brings out the best in many of them, helping them to grow in the directions consistent with their own talents and preferences. Most importantly, it prepares students to function in a practical setting, where they will also need to continuously acquire new knowledge and skills to respond adequately to the challenges and situations that they need to face.

14: EXPERTISE OF TEACHING STAFF 2011/2012

Doctorate (Dr.) or Master (Ma.)	Full title and name							Expertise
		Assignor	Module Lecturer	Coach	Bachelor	Master	BKO	
Dr.	prof. dr. S. Bambang Oetoma		x	x		x		Paediatric Applications in Ambient Intelligence
Dr.	prof. dr. ir. A.C. Brombacher		x	x	x	x		Management of Design and Production Technologies, Electrical Engineering
Dr.	prof. dr. ir. J.H. Eggen	x	x	x	x	x		User Centred Engineering
Dr.	prof. dr. ir. L.M.G. Feijs	x	x	x	x	x		Industrial Design of Embedded Systems
Dr.	prof. dr. ir. C.C.M. Hummels		x	x		x		Aesthetics of Interaction in the Design of Intelligent Products and Systems
Dr.	prof. dr. P. Markopoulos MSc		x	x	x	x		User Centred Engineering, User-System Interaction
Dr.	prof. dr. ir. J.B.O.S. Martens		x	x	x	x		Visual Interaction
Dr.	prof. dr. ir. E. den Ouden			x		x		Business Process Design, Innovation Management
Dr.	prof. dr. C.J. Overbeeke		x	x	x	x		Intelligent Products and System Design
Dr.	prof. dr. G.W.M. Rauterberg	x		x	x	x		Human Communication Technology
Dr.	prof. dr. B.A.M. Schouten BA			x	x	x		Design of Intelligent Systems of Playful Interactions
Dr.	dr. ir. R.M.C. Ahn	x	x	x	x	x		Designed Intelligence, Logic in Computer Science and Physics
Dr.	dr. A. Alblas MSc	x	x	x	x	x		Business Process Design, Innovation Management
Dr.	dr. M.J.H. Anthonissen	x			x			Mathematics (W&I)
Dr.	dr. ir. E.I. Barakova	x	x	x	x	x		Designed Intelligence, Artificial Intelligence
Dr.	dr. ir. M.M. Bekker	x	x	x	x	x	x	User Centred Engineering, Industrial Design Engineering (TU Delft)
Dr.	dr. ir. M. Bruns Alonso	x	x	x	x	x		Designing Quality in Interaction, Industrial Design Engineering (TU Delft)
Dr.	dr. W. Chen	x	x	x	x	x	x	Designed Intelligence, Electrical Engineering
Dr.	dr. ir. F.L.M. Delbressine	x	x	x	x	x	x	Designed Intelligence, Mechanical Engineering
Dr.	dr. ir. H.A. van Essen	x	x	x	x	x		User Centred Engineering, Control Engineering
Dr.	dr. ir. J.W. Frens	x	x	x	x	x	x	Designing Quality in Interaction, Industrial Design Engineering (TU Delft)
Dr.	dr. M. Funk MSc	x		x	x			Designed Intelligence, Computer Science and Electronic Systems
Dr.	dr. E.M. van de Garde-Perik			x	x			User Centred Engineering, User-System Interaction
Dr.	dr. ir. M.J. de Graaf	x		x	x	x		User Centred Engineering, Physics
Dr.	dr. ir. B.J. Hengeveld	x	x	x	x	x		Designing Quality in Interaction, Industrial Design Engineering (TU Delft)
Dr.	dr. E.A.W.H. van den Hoven MTD	x		x	x	x		User Centred Engineering, User-System Interaction
Dr.	dr. J. Hu PDEng MEng	x	x	x	x	x	x	Designed Intelligence, User-System Interaction

Doctrate (Dr.) or Master (Ma.)	Full title and name							Expertise
		Assignor	Module Lecturer	Coach	Bachelor	Master	BKO	
Dr.	dr. J.C.M. Keijsper	x			x			Mathematics (W&I)
Dr.	dr. J.M.L. Kint	x	x	x	x	x		Art History
Dr.	dr. ir. G.R. Langereis	x	x	x	x	x	x	Designed Intelligence, Electrical Engineering and Ergonomics
Dr.	dr. P. Levy	x	x	x	x	x		Designing Quality in Interaction, Kansei Science
Dr.	dr. Y. Lu	x	x	x	x	x	x	Business Process Design, Industrial and Systems Engineering
Dr.	dr. ir. I.M. Luyk	x	x	x	x	x		Business Process Design, Innovation Management
Dr.	dr. ir. K.M. van Mensvoort			x		x		User Centered Engineering, Computer Science and Artist
Dr.	dr. Z. Obrenovic	x		x	x	x		User Centred Engineering, Computer Science
Dr.	dr. ir. P.R. Ross	x	x	x	x	x		Designing Quality in Interaction, Industrial Design Engineering (TU Delft)
Dr.	dr. ir. J.L. Rouvroye	x		x	x	x		Business Process Design, Industrial Process Management
Dr.	dr. H.M.J.J. Snelders	x	x	x	x	x		Marketing, Psychology
Dr.	dr. J.M.B. Terken	x	x	x	x	x		User Centred Engineering, Psychology
Dr.	dr. O. Tomico Plasencia	x	x	x	x	x		Designing Quality in Interaction, Innovation Processes in Product Design
Dr.	dr. A. Trotto Arch		x	x	x	x		Designing Quality in Interaction, Architecture
Dr.	dr. A.A. Vinke			x	x			Education
Ma.	J.A. Alves Lino MA			x	x	x		Multimedia Communication Design, Doctoral Candidate
Ma.	ir. S.E. Baha		x	x				Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. J.D. Bakker			x	x			Industrial Design Engineering (TU Delft)
Ma.	ir. S. Bakker			x	x	x		Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. M. ten Böhmer			x	x			Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	C.B. van den Boom MSc	x			x			Business Modeling
Ma.	M.K. Coleman MSc			x	x	x		Media Technology
Ma.	ir. M.J.G. Croes			x	x			Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. J.F.M. d'Archard van Enschut	x			x			Applied Physics
Ma.	ir. K.C.E. van Dam			x	x	x		Industrial Design Engineering (TU Delft)
Ma.	ir. E.J.L. Deckers		x	x		x		Industrial Design (TU Eindhoven), Doctoral Candidate

Doctorete (Dr.) or Master (Ma.)	Full title and name	Assignor	Module Lecturer	Coach	Bachelor	Master	BKO	Expertise
Ma.	R.V.A.Q.A. Frieling MA MSc			x	x	x		Industrial Design Engineering (TU Eindhoven and Royal College of Art)
Ma.	ir. P. van de Graaf			x	x	x		Industrial Design Engineering (TU Delft), Doctoral Candidate
Ma.	ir. H. van Heel			x	x	x		Architecture
Ma.	A.P. Hendriks MA			x	x			Art History
Ma.	drs. M.C. Kaptein			x		x		Psychology
Ma.	ir. S. Klooster	x			x			Industrial Design Engineering (TU Delft)
Ma.	J.W. van der Klooster MSc			x				Industrial and Product Design (Istituto Europeo di Design)
Ma.	ir. J.R. Kortstra			x	x			Industrial Design Engineering (TU Delft)
Ma.	ir. C.D. Kuenen		x			x		Industrial Design Engineering (TU Delft), Doctoral Candidate
Ma.	ir. H.J. Leeuw			x	x	x		Music and Physics
Ma.	ir. R. Magielse			x	x	x		Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. C.J.P.G. Megens		x	x		x		Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. M.E.H.G. Meuffels	x			x			Innovation Consultant
Ma.	ir. S.S. Mulder	x		x	x	x	x	Industrial Design Engineering (TU Delft)
Ma.	M. Nakevska MSc			x	x			Computer Science
Ma.	drs. A.G.G.E. Németh	x	x	x	x	x		Media and Culture
Ma.	ir. S.A.M. Offermans			x	x	x		Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. M.M.R. Peeters		x	x	x	x		Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. P.J.F. Peters	x		x	x			Computer Science and Electronics
Ma.	K. Ploegmakers MSc			x	x			Industrial Design Engineering (TU Eindhoven and Royal College of Art)
Ma.	L. Reindl Diplom Designer		x	x	x	x		Industrial Design (Universität Essen GHS)
Ma.	ir. J.T. Stienstra		x			x		Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	ir. M.A.H. Stoffelsen			x	x	x		Industrial Design Engineering (TU Delft)
Ma.	ir. F.P.A.M. Taminiâu			x	x			Industrial Design Engineering (TU Delft)
Ma.	ir. R. Tieben			x	x			Industrial Design (TU Eindhoven), Doctoral Candidate
Ma.	M.J. Toeters MA			x	x	x		Fashion Design
Ma.	ir. M.F. Versteeg	x		x	x	x		Industrial Design Engineering (TU Delft)
	J.C. Alkema			x	x	x		Artist, Light Design
	C. Bangaru	x			x			Model making and CAD Engineering, Supporting staff

Doctorate (Dr.) or Master (Ma.) Full title and name	Assignor Module Lecturer	Coach	Bachelor	Master	BKO	Expertise
R. van Berkel		x	x	x		Laban Movement Analyst
G.J. van den Boomen	x			x		Electronics, Supporting staff
C.L. van de Bremen	x	x	x	x		Design Academy, Cultural Design
F.M.J. Franssen	x		x			Artist
R.W. Gijsbers	x		x			Design Academy, Moviemaking
H.M. Kuipers	x		x			Electronics (E), Supporting staff
J.A.H. Lonsain		x	x	x		Artist
S.I. Lucas		x	x			Design Academy
F.J. Parthesius		x	x			Design Academy, Photography
Z.I. Skalska	x		x			Design Academy, Trendwatcher
M.J. Thompson BA		x	x			Design Academy
R. van Tienhoven		x	x	x		Artist
R.F.E. de Torbal	x	x	x			Patent Engineering
S.G. de Waart	x	x	x	x		Design Academy, Material Design
M.J. van de Wiel	x		x			Product Design, Drawing
ing. V.O. Winthagen	x	x	x			Design Academy, Social Design
F. Ziedses Des Plantes		x	x	x		Design Academy
R. Zimmerman		x	x			Artist

15: RANKING OF ID PROGRAMS IN THE NETHERLANDS

The following **student verdicts** are based on the NSE 2012 (National Student Inquiry). This inquiry is held yearly for all universities and professional schools. The verdicts are consequently modified by the Keuzegids Hoger Onderwijs, which compares the scores with the national mean.

De plusses and minuses indicate if and how much the verdict varies from the national mean. The **expert verdict** is taken from the accreditation verdicts by the NVAO. All sufficient verdicts are indicated with an o, all good verdicts are marked with a + and all excellent verdicts with a ++. The **total score** is an equally weighted mean of all scores.

RESULTS KEUZEGIDS BACHELOR 2013

		2013		2011	
TU Eindhoven	Industrial Design	64	o	70	+
U Twente	Industrial Design	58	o	62	o
TU Delft	Industrial Design	48	-	58	0

RANKING BACHELOR: INDUSTRIAL DESIGN

	Success rate		Verdicts								Score	
	Survival 1st year*	% Degree after 4 years**	Contents program	Teaching staff	Scientific preparation	Practical orientation	Study load	Information and contact	Facilities	Expert verdict	Total Score	Verdict
TU Eindhoven	o	+	o	o	o	+++	-	-	o	o	64	o
U Twente	+	---	o	o	-	+	-	+	-	o	58	o
TU Delft	o	o	-	-	-	+	--	-	-	o	48	-

*Survival 1st year = 73-83%

**% Degree after 4 years = 66-80%

RESULTS KEUZEGIDS MASTER 2013

University	Program	2013	2012	2011
TU Eindhoven	Industrial Design	67	67	67
U Twente	Industrial Design Engineering	65	60	63
TU Delft	Strategic Product Design	61	61	60
TU Delft	Design for Interaction	60	64	66
TU Delft	Integrated Product Design	60	56	56

RANKING MASTERS: INDUSTRIAL DESIGN (ACADEMIC LEVEL)

		Students [67%]											Expert [33%]						
		Year of Inquiry	Connection	Contents Program	Elective Space	Coherence program	Teaching staff	Educational methods	Preparation for career	Communication	Study load	Buildings and facilities	Ambition	Level program	Level staff	Quality staff	Level of graduates	Total score	Final verdict
TU Eindhoven	Industrial Design	2009	o	+	+	++	+	++	+	-	--	o	+	o	o	+	o	69	+
TU Delft	Design for Interaction	2009	+	+	+	+	o	+	+	o	-	-	+	o	+	+	o	69	+
TU Delft	Strategic Product Design	2009	o	+	o	+	o	+	o	o	o	-	+	o	+	+	o	65	+
U Twente	Industrial Design Engineering	2009	o	-	+	o	o	o	-	o	-	-	+	o	o	+	o	59	+
TU Delft	Integrated Product Design	2009	-	-	o	o	-	o	-	-	-	-	+	o	o	+	o	53	+

16: SELECTION AND PROMOTION CRITERIA FOR STAFF

Appointment and promotion criteria for assistant professors (UD), associate professors (UHD) and full professors (HL)

in the Industrial Design department of the TU/e

(Dated 3 November 2008)

Introduction The task of the **Departmental** Appointments Advisory Committee (FBC) is to advise the department's management in the areas of the appointment and promotion of scientific staff. It aims to do this by applying clear, transparent criteria tailored to the department's specific requirements. The starting point for these criteria has been provided by the job profiles for assistant, associate and full professors developed as part of the University System for Job Classification (UFO). However, the UFO system requirements are too generic and insufficiently geared to the specific, multidisciplinary nature of the education and research carried out in the Industrial Design (ID) department.

For example, in the UFO profiles, output, expressed as the number of publications in scientific journals, is a key factor. This underpins the acquisition of external funds for research, the development and delivery of education, and the fulfilment of managerial tasks. In the ID department, other factors are equally important, namely 'industrial experience/the realization of a design based on multidisciplinary and the ability to integrate'. The committee has attempted to make this aspect explicit in a measurable way and to include it in the appointment and promotion criteria.

The criteria The committee regards the criteria it has developed as a resource, a transparent, practical (quantitative) guideline for devising the career policy to which the scientific staff of the ID department is subjected to. For example, the committee expresses the independent acquisition of project funding in actual amounts, € 200,000, which equates to acquiring one four-year doctoral project. With these criteria, the committee wishes to create an assessment framework that is shared by the departmental community and that does justice to the nature and quantity of work with which scientists are charged within the department. The committee hopes that the actual use of the criteria will enable their amendment and refinement, so that a community feeling arises for the requirements that our scientists may/must satisfy to gain an appointment or promotion.

Based on the UFO profiles, the criteria have been embellished and refined so that they are tailored more closely to the specific requirements of the ID department. In broad outline, the criteria can be matched to the following aspects:

1. Scientific research (incl. output expressed in H-index impact)
2. Industrial/design experience (design prizes, a design, patents)

3. Scientific education (the development and delivery of education)
4. Management and administration (working with groups, committees and management of bodies).

Within the committee, the theme of 'Design' (see *) has received a great deal of attention. There are three aspects of 'Design', each of which must be tested on its merits: the design as an end result (object), the design process leading to a design (incl. the integration of various types of knowledge/multi-disciplinarily), and the designer in person (incl. approach taken, originality, industrial experience, and reputation). In the opinion of the committee, it should be evident from the curricula followed by the candidates and from their portfolios that they are regarded in their disciplines as innovative, ready and able to cooperate with a range of scientific disciplines.

The committee is of the opinion that a design should be assessed by means of peer review. A peer review should consider the design itself, the way which the design has been created and the designer in person. Among others, the following aspects are assessed:

Design

1. Newness of the technique, originality
2. Realized construction and its materialization, if applicable
3. Social relevance, allure and impact

Design process

4. The approach in terms of the design method and well-reasoned subjectivity
5. The evaluation of the actual performance of the design, compared with its intended performance
6. The integration of design, development and research (vertical)
7. The integration of different parts of a design and secondary aspects (horizontal)

Designer: personal qualities

8. Intellectual view of the future development of the design field, the discipline and scientific field covered by the programme
9. Design orders, preconditions and the realization of designs, findings and patents
10. Professional skill, practicability, technical ingenuity
11. Capable to collaborate with other disciplines (i.e. design, engineering and social sciences)

Procedure

The Departmental Appointments and Promotion Advisory Committee (FBC) is an advisory committee to the department's management board. It has taken upon itself the task of shaping the staff development policy for the ID department's scientific staff. To this end, the FBC advises the department's management board, upon the appointment and promotion of its scientific staff, to always ask the FBC for advice and to ensure that at least one member of the FBC is a member of any Appointments Advisory Committee (BAC).

⁷ The following three aspects of design are based in part on Criteria for the assessment of design in construction disciplines, a recommendation by the Discipline Consultative Body for Construction Technique (DCT) compiled in 2000.

⁸ The committee believes that the aspect of 'design' should be included explicitly as a criterion. For possible criteria for a good design, the committee refers to the recommendation of the Association of Universities in the Netherlands (VSNU) working group, in which the following criteria for design are mentioned:

- Design quality
- Production expressed in oeuvre (portfolio)
- Design and social relevance, including economic benefit and knowledge valorisation
- Usability

	Assistant Professor (UD-2)	Assistant Professor (UD-1)
	Design/Research	
UFO	<ul style="list-style-type: none"> ● The performance of research based on a pre-defined and approved research proposal. 	<ul style="list-style-type: none"> ● Contribution to the acquisition of financing from second and third flows of funds. ● The independent performance of research. ● Substantial supervision of scientific staff (doctoral students / postdocs) during the performance of research.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Holds a PhD. ● Has demonstrated the ability to: do independent research of good quality and to write clear publications about it (at least two papers in leading scientific journals), realize design/artefacts (at least two in trade journals and/or the press), or obtain patents (at least one). ● Is evidently able to give scientific presentations. ● Has had one to two years' work experience since gaining his or her PhD (at least one month abroad) and gained work experience at more than one institution (in academia or industry) while studying. ● Is expected to apply for a personal grant or fellowship. <p>Optional</p> <ul style="list-style-type: none"> ● As a co-supervisor supervises successfully at least one doctoral student ('proefontwerp' or 'proefschrift'), whereby the student involved gained a PhD degree. 	<p>As UD-2, with the addition of:</p> <p>Obligatory</p> <ul style="list-style-type: none"> ● Does high-quality research, evidenced by his or her publication list (impact factor: H-index of at least three), design prize (at least one recognised prize) or patent list (at least two patents). ● On his/her own initiative, writes project proposals and has demonstrated the ability to acquire project funding independently (at least 200K euro cumulative). ● Has applied for a personal grant or fellowship. ● Knows what is happening worldwide in his/her own discipline and has started to build his/her own network and collaborative relations with other disciplines inside the department and/or institutes at home and abroad. ● Gives lectures/presentations at international conferences in the own discipline. ● If sufficient foreign experience is lacking, there is at least a realistic plan to work abroad for at least four months during the next three years. ● As a co-supervisor supervises successfully at least one doctoral student, ('proefontwerp' or 'proefschrift') through to their attainment of a PhD degree. <p>Optional</p> <ul style="list-style-type: none"> ● As a co-supervisor has finished successfully at least one doctoral student ('proefontwerp' or 'proefschrift'), whereby the student involved gained a PhD degree. ● Gives lectures/presentations at international conferences in an adjacent discipline. ● Has obtained a personal grant or fellowship.

		Education	
UFO	<ul style="list-style-type: none"> ● The teaching delivery of regular parts of the curriculum that have already been developed. 		<ul style="list-style-type: none"> ● The teaching delivery of parts of the curriculum that have already been developed. ● Responsibility for the periodic review of the parts of the curriculum allocated to him/her. ● The observance of scope for the reform of the parts of the curriculum allocated to him/her.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Has the necessary communication and social skills to take on teaching tasks. ● Is capable to give tutorials and/or lectures/ assignments/modules/classes, and to supervise students. ● Is expected to obtain the Basic Teaching Qualification (BKO). <p>Optional</p> <ul style="list-style-type: none"> ● Has past teaching experience. 		<p>Obligatory</p> <ul style="list-style-type: none"> ● Holds the Basic Teaching Qualification (BKO) as a result of participation in the department's initial teacher training or the assessment of teaching skills acquired previously. ● Has demonstrated the ability to deliver good education (e.g. via teaching evaluations or peer reviews). ● Has demonstrated the ability to provide proper supervision to graduating students. <p>Optional</p> <ul style="list-style-type: none"> ● Has participated in one or more collaborative multi-disciplinary teaching activities.
		Organisation	
UFO	<ul style="list-style-type: none"> ● Participation in working groups, committees or project teams within the capacity group. 		<ul style="list-style-type: none"> ● The leadership of working groups, committees or project teams within his or her own capacity group.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Has the necessary communication and social skills and is expected to take on organizational tasks within the capacity group. ● Is capable to cooperate with colleagues within the department and preferably of other disciplines. 		<p>Obligatory</p> <ul style="list-style-type: none"> ● Plays an active role within his/her own capacity group and/or department (e.g. participation in committees, working groups or project teams). <p>Optional</p> <ul style="list-style-type: none"> ● Chairs committees, working groups or project teams inside the department (needs to be explained by the chair of the capacity group).

Associate Professor (UHD-2)

Associate Professor (UHD-1)

Design/Research

UFO	<ul style="list-style-type: none"> ● The coordination of and responsibility for the realization of related research projects that form a significant part of a research programme. ● Substantial supervision of scientific staff during the performance of research 	<ul style="list-style-type: none"> ● The coordination of and responsibility for the realization of a research programme, or responsibility for the planning and realization of a long-range specialized research project. ● Acting as copromoter for doctoral students.
ID Dept	<p>As UD-1, with the addition of: Obligatory</p> <ul style="list-style-type: none"> ● Is able to contribute (quantitatively and qualitatively) to science, at a high level over a longer term (at least four years), in terms of publications (impact factor: H-index of at least six), design/ artefacts (at least four design prizes/nominations) or patents (at least six granted). ● Has extensive work experience abroad (at least 12 months in total). Has an international network that produces demonstrable results (e.g. invited lectures, keynote speeches, participation in international project consortia, international committees, etc.). ● Has chosen and built up his/her own line of research, preferably in relation to other disciplines inside the department. ● Has independently acquired financing from second and third funding streams (at least 400K euro cumulative), preferably in collaboration with the other disciplines. ● Supervises doctoral students and postdocs in his/her own design/research field (at least three full-time scientific staff members). ● The research output of the co-supervised scientific staff members is of good quality (at least three publications, three design prizes/nominations, or three patents). ● As a co-supervisor supervises successfully at least two doctoral student ('proefontwerp' or 'proefschrift') through to their attainment of a PhD degree. <p>Optional</p> <ul style="list-style-type: none"> ● Has acquired a personal grant or fellowship. ● Is as an expert involved in PhD-projects of other disciplines. ● Supervises successfully at least one doctoral student ('proefontwerp' or 'proefschrift') evidenced by joint publications, joint design, joint funding proposal, joint patent application, or award/prize or nomination for an award. 	<p>As UHD-2, with the addition of: Obligatory</p> <ul style="list-style-type: none"> ● As well as having a public profile within the university and the Netherlands, has built a demonstrable international reputation in the discipline of the capacity group, as evidenced by publications (impact factor: H-index of at least eight), design prizes (four), and/or patents (at least eight granted). ● Has a clear intellectual view of the discipline and sees the contribution his/her own design/ research can make in relation with the other capacity groups. Actively disseminates this view. Can state the direction in which the discipline and its environment are moving. ● Has built up his/her own line of design/research and formulates his/her own long-term design/ research objectives, preferably in relation to the other disciplines. ● Is actively, critically and continually seeking improvement, and looking to extend boundaries in relation to the other disciplines. ● Sees or seeks for future opportunities, needs and problems, and acts on these. ● Has independently acquired financing for his/her own line of design/research (at least 600K euro cumulative), preferably in collaboration with the other disciplines. ● Independently steers and manages a number of scientific staff members working in his/her line of design/research. Has demonstrated the ability to recruit, supervise, give feedback to and coach his staff according to the departmental mission. ● Is as co-supervisor involved in PhD-projects of other disciplines. ● Supervises successfully at least two doctoral student ('proefontwerp' or 'proefschrift') evidenced by joint publications, joint design, joint funding proposal, joint patent application, or award/prize or nomination for an award. ● As co-supervisor has supervised successfully at least three doctoral students ('proefontwerp' or 'proefschrift') through to their attainment of a PhD degree.

		Education	
UFO	<ul style="list-style-type: none"> ● The development of allocated parts of the curriculum based on a predetermined format, content and teaching method. ● The compilation of improvement proposals in response to a teaching evaluation of the allocated parts of the curriculum. 		<ul style="list-style-type: none"> ● The initiation and development of the format, content and teaching method for a substantial part of the curriculum within the scope of the chair. ● The compilation of improvement proposals in response to a teaching evaluation of parts of the curriculum, and their implementation.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Has developed and delivered independently one or more parts of the curriculum (i.e. assignments, modules, classes, etc.), preferably in relation to the other disciplines. ● Has demonstrated the ability to design the content of these parts to a high quality. ● Has initiated and supervised one or more teaching activities based on collaboration with several disciplines. 		<p>Obligatory</p> <ul style="list-style-type: none"> ● Plays a prominent and visible role in the education offered by the department. ● Acts as (guest) lecturer at foreign academic educational institutions. ● Has initiated and supervised one or more teaching activities based on collaboration with different disciplines.
		Organisation	
UFO	<ul style="list-style-type: none"> ● The performance of management and/or administrative tasks that go beyond the capacity group, for example: running a degree-course committee or coordinating a degree-course, etc. 		<ul style="list-style-type: none"> ● The management of parts of the capacity group or the performance of management tasks within the professor's mandate, for example: holding appraisal interviews or drafting the budget for the chair.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Participates in department-wide committees and activities, and contributes to the strategic ambitions of the department. ● Chairs committees, working groups or project teams inside the department (needs to be explained by the chair of the capacity group). 		<p>Obligatory</p> <ul style="list-style-type: none"> ● The management of parts of the capacity group or the performance of management tasks within the professor's mandate, for example: holding appraisal interviews or drafting the budget for the chair. ● Acts as chairperson in department-wide committees and activities and contributes to the strategic ambitions of the department.

	Full Professor (HL-2)	Full Professor (HL-1)
	Design/Research	
UFO	<p>The translation of developments in the research field to national research programmes.</p> <p>Authority in own research field, thus building a reputation for the department, as evidenced by:</p> <ul style="list-style-type: none"> ● Has scientific publications in leading scientific journals; ● holds an editorial role at scientific journals; ● contributes research results in prominent research collaborations; ● is asked to speak at seminars. 	<p>The translation of developments in the research field to international research programmes. National and international authority in own research field, thus building a reputation for the department, as evidenced by:</p> <ul style="list-style-type: none"> ● scientific publications in leading scientific journals that are cited regularly by leading scientists; ● holds an editorial role at one of the ten most authoritative scientific journals; ● groundbreaking research results in prominent research collaborations; ● acts as keynote speaker at seminars where it is decided what constitutes to be 'state of the art' in the research field.
ID Dept	<p>As UHD-1, with the addition of: Obligatory</p> <ul style="list-style-type: none"> ● As well as having a public profile within the university and the Netherlands, has built a solid international reputation within his scientific domain , as evidenced by publications (impact factor: H-index of at least ten), design awards/prizes (at least eight), or patents (at least 12). ● Has a clear intellectual view of the discipline and defines his or her own line of design/research within the discipline. Actively disseminates this view. Steers the discipline within and outside the research group. ● Has built up his own field of design/research and formulates his/her own long-term design/research objectives, in particular in relation to the other disciplines. ● Cooperates at an international level with colleagues (e.g. in European projects). ● Is a member of the editorial board of international, leading scientific journals or design prize/award juries (at least two), or an associate editor or chair of a jury (at least one). ● Is regularly asked to speak at national or international meetings in his/her own discipline. ● Always and reliably acquires financing for his/her own field of design/research (at least 800K euro cumulative in total), making it self-supporting, and is responsible for the funding application process. ● Independently steers and manages a number of UDs, UHDs, postdocs and doctoral students working in his/her field of design/research. Has demonstrated the ability to acquire, supervise and give feedback to the right people. ● As first supervisor has supervised at least four doctoral students successfully through to their attainment of a PhD degree. 	<p>As HL-2, with the addition of: Obligatory</p> <ul style="list-style-type: none"> ● Has built a solid international reputation in the discipline, as evidenced by publications (impact factor: H-index of at least 12), design prizes (at least ten), or patents (at least 14). ● Has a clear intellectual view of his/her own discipline and adjacent disciplines. Defines his/her own line of design/research within and outside the discipline. Actively disseminates this view and steers the discipline at national and international levels. ● Has (co)built up several fields of design/research and formulates his/her own long-term design/research objectives, in particular in relation with the other disciplines. ● Cooperates at an international level with colleagues (e.g. in European projects). ● Is a member of the editorial board of international, leading scientific journals or design prize/award juries (at least 4), an associate editor or chair of a jury (at least two), or an editor-in-chief (at least one). ● Is regularly asked to speak at national and international meetings in his/her own discipline and beyond. ● Always and reliably acquires financing for his/her own field of design/research (at least 1,000K euro cumulative in total), making it self-supporting, and is responsible for the funding application process. ● Independently steers and manages a number of HIs, UDs, UHDs, postdocs and doctoral students working in and outside his/her field of design/research. Has demonstrated the ability to recruit, supervise and give feedback to the right people. ● As first supervisor has supervised at least five doctoral students successfully through to their attainment of a PhD degree.

Education

UFO	<ul style="list-style-type: none"> ● Responsibility for the quality of the education provided within the scope of his or her own chair. ● Makes strategic proposals and implements departmental education policy within the scope of his or her own chair. 	<ul style="list-style-type: none"> ● The dissemination of a clear and appealing intellectual view of education and its development, with a focus on the innovation of the departmental curriculum and optimising the return on education.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Plays a prominent and visible role in the education offered by the department. ● Is responsible for the quality and design of the education provided in his or her own discipline. ● Acts as (guest) lecturer at foreign academic educational institutions. ● Has independently initiated and supervised several multidisciplinary teaching activities. 	<p>Obligatory</p> <ul style="list-style-type: none"> ● Plays a prominent and visible role in the education offered by the department. ● Is responsible for the quality and design of the education provided in his or her own discipline. ● Acts as (guest) lecturer at foreign academic educational institutions. ● Has independently initiated and supervised several multidisciplinary teaching activities.

Organisation

UFO	<ul style="list-style-type: none"> ● The performance of management and/or administrative tasks that go beyond the capacity group, for example running a degree-course committee or coordinating a degree-course, etc. 	<ul style="list-style-type: none"> ● The management of part of the capacity group or the performance of management tasks within the professor's mandate, for example holding appraisal interviews or drafting the budget for the chair.
ID Dept	<p>Obligatory</p> <ul style="list-style-type: none"> ● Is (co)responsible for the management of a capacity group (at least five full time scientific and/or administrative staff members). ● Is expected to run committees within the university and at national level. 	<p>Obligatory</p> <ul style="list-style-type: none"> ● Is responsible for the management of a capacity group (at least ten full time scientific and administrative staff members). ● Is expected to run committees at national and international level. ● Is capable of fulfilling management positions at departmental level.

17: TRAINING COURSES FOR STAFF OFFERED BY TU/E

PROOF: PROVIDING OPPORTUNITIES FOR PhD STUDENTS

PhD Program	1st year	2nd year	3rd year	4th year
Research subjects	<ul style="list-style-type: none"> ● Exploration research plan ● Literature study 	<ul style="list-style-type: none"> ● Execution of research ● Publication 	<ul style="list-style-type: none"> ● Execution of research ● Publication 	<ul style="list-style-type: none"> ● Complete research ● PhD thesis
Teaching subjects		<ul style="list-style-type: none"> ● Supervising Master's students and interns; tutorship 	<ul style="list-style-type: none"> ● Supervising Master's students and interns; tutorship 	
Recommended PROOF courses	<ul style="list-style-type: none"> ● Taking charge of your PhD project ● Itercultural communication & cooperation ● Science & intellectual property ● Scientific integrity 	<ul style="list-style-type: none"> ● The art of presenting science ● Writing articles & abstracts ● Supervising master students ● Teaching & learning in higher education 	<ul style="list-style-type: none"> ● Career orientation: ● Individual personality analysis ● Technology Entrepreneurship 	<ul style="list-style-type: none"> ● Career orientation: ● Career consult
Personal Development Evaluation points	<ul style="list-style-type: none"> ● Education supervision plan within 3 months ● In the first year ('go/no-go') 	<ul style="list-style-type: none"> ● Performance interview 	<ul style="list-style-type: none"> ● Performance interview 	<ul style="list-style-type: none"> ● Performance interview ● Form I' (after 3,5 years) ● Obtain your PhD

UNIVERSITY TEACHING QUALIFICATION (BKO) TRAINING PROGRAM

Intake (2 hours)

List of personal learning goals and earlier acquired competencies

Course Component (90 hours) Contact hours and assignments	Practical Component (110 hours) On-the-job coaching
Introduction course (25 hours) Teaching and learning in higher education	Preparing, implementing, testing and evaluating of your own course or education project Supervision meetings Submission of portfolio
Developing teaching methods (8 hours) ● Course design (8 hours)	
Teaching (31 hours) <ul style="list-style-type: none"> ● Activating teaching methods (6 hours) ● Voice training (8 hours) ● Using technology in teaching (7 hours) ● Supervising Master students (10 hours) or supervising PhD students (10 hours) 	
Testing (6 to 12 hours) <ul style="list-style-type: none"> ● Assessment using exams (6 hours) and/or ● Other types of assessment (6 hours) 	
Evaluating education (6 hours)	
Optional courses (8 to 14 hours)	

Conclusion of the TU/e BKO Training Program

Assessment of your portfolio by the BKO committee

Awarding BKO Certificate

18: COMPETENCES OF TEACHING STAFF (2013)

In May 2013 we requested all teaching staff to indicate the competences in which their contribution and expertise is strongest. The following table provides the resulting overview, sorted (1) by research groups (including ‘freelancers’) and (2) by theme they belong to. The numbers are an estimation of the competences per educator and add up to 100% per person. When one educator belongs to more than one theme, his/her percentages are split over these themes (to indicate the relative contribution to each theme). The actual list of themes is: Changing Behaviour (CB); Comfort & Bonding in Health Care (CBinHC); Light, Time, Space, Move (LTSM); Next Nature (NN); Out of Control (OoC); Playful Interactions (PI); Wearable Senses (WS).

Capacity Group	Theme	Name	IC	FS	IT	DMM	UFP	SCA	DBP	DRP
BPD	CB	E.M. van de Garde	25				25		25	25
BPD	LTSM	P.H. den Ouden							100	
BPD	OoC	J.L. Rouvroye			50	50				
BPD	PI	Y. Lu				20	20	20	20	20
BPD	WS	A. Brombacher			25	25		25	25	
DI	CBinHC	W. Chen			34		33			33
DI	CBinHC	F.L.M. Delbressine			33	34				33
DI	CBinHC	L. Feijs		33	33	34				
DI	CBinHC	P. Peters			34	33				33
DI	OoC	M. Funk	33		34	33				
DI	OoC	J. Hu			25	25	25			25
DI	OoC	M. Rauterberg				25	25	25		25
DI	PI	E. van der Spek	20	20			20		20	20
DI	WS	R. Ahn			50	50				
DI	CB	E. Barakova			25	25				
DI	NN	E. Barakova			25	25				
DQI	CB	M. Bruns	25	25				25		25
DQI	CB	C. Hummels	10	10			10	10		10
DQI	OoC	C. Hummels	10	10			10	10		10
DQI	LTSM	R. Frieling	25	25	25					25
DQI	NN	E.B. van der Houwen	25	25	25					25
DQI	NN	O. Tomico	17				16			17
DQI	WS	O. Tomico	17				16			17
DQI	OoC	J. Frens	30	30	10					30
DQI	OoC	B.J. Hengeveld	25	25				25		25
DQI	WS	P. Lévy	20	20			20	20		20

Capacity Group	Theme	Name	IC	FS	IT	DMM	UFP	SCA	DBP	DRP
UCE	CBinHC	P. Markopoulos			34		33			33
UCE	CBinHC	D. Tetteroo			50		50			
UCE	LTSM	H.A. van Essen	25		25		25			25
UCE	LTSM	J.B. Martens	10		10	10	10			10
UCE	CBinHC	J.B. Martens	10		10	10	10			10
UCE	NN	B. Eggen		33			33			34
UCE	NN	K. van Mensvoort	25	25	25			25		
UCE	OoC	J. Terken	16				17			17
UCE	NN	J. Terken	16				17			17
UCE	PI	P. Atasoy		34			33			33
UCE	PI	T. Bekker	33				33			34
UCE	PI	M. de Graaf				34	33			33
UCE	PI	B.A.M. Schouten	20	20			20	20		20
UCE	PI	R. Tieben			33		34			33
FL	CB	B.G. Bustamante								100
FL	CB	M. Munnecke	25					25	25	25
FL	CB	J.P.H. Thoolen							50	50
FL	CB	M. Verkuijl	34					33	33	
FL	CBinHC	J. Gillesen	34				33	33		
FL	CBinHC	J.R.A. Kortstra	25	25			25			25
FL	CBinHC	R.F.E de Torbal							50	50
FL	CBinHC	J. Vinken	25	25			25			25
FL	CBinHC	P. van de Graaf			25			25		
FL	NN	P. van de Graaf			25			25		
FL	CBinHC	J.B. Karelse	10	10			10		10	10
FL	OoC	J.B. Karelse	10	10			10		10	10
FL	LTSM	J.C. Alkema	33	34	33					
FL	LTSM	J.A. Alves Lino	33	34				33		
FL	LTSM	J. D. Bakker	25		25		25			25
FL	LTSM	R. van Berkel	33	34						33
FL	LTSM	W. Smeenk						50		50
FL	LTSM	R. Zimmermann		33	33			34		
FL	NN	J.M. van Gelder	20	20	20				20	20
FL	NN	J. Huizinga	20	20			20	20		20
FL	NN	M.J. Thompson	25	25				25		25
FL	NN	R. Van Tienhoven	20	20	20			20		20

Capacity Group	Theme	Name	IC	FS	IT	DMM	UFP	SCA	DBP	DRP
FL	NN	F. Ziedses Des Plantes	33	34						33
FL	OoC	J. Kint		34				33		33
FL	OoC	M. de Koning	25	25	25					25
FL	OoC	L. Reindl.	33	34					33	
FL	PI	E.J.C. Bartholomeus		50			50			
FL	PI	D. Kousemaker	25		25		25	25		
FL	PI	H. Leeuw	25	25	25			25		
FL	PI	F. Taminiau	20	20			20		20	20
FL	PI	S. Nemeth	13	12	13			12		
FL	NN	S. Nemeth	13	12	13			12		
FL	WS	J. Asjes	50	50						
FL	WS	M. Toeters	25	25	25					25
FL	WS	M. Versteeg	50					50		
FL	WS	S.G. de Waart	25	25				25		25
FL	WS	J. van der Weele	33					34		33
FL	WS	P. Wiertz	50		50					
FL	WS	S. Zwegers	50	50						

19: THEMES AND THEME CHAMPS FOR 2008/2013

2008/2009 SEMESTER 2	THEMES
Jun Hu	Across Realities
Joep Frens & Lucian Reindl	Adaptive & Rich
Jacques Terken	AutoMobility
Sander Mulder	Discovering & Learning
Marco Rozendaal	Experiences & Emotions
Rombout Frieling	Light, Space, Time, Move
Wei Chen	Medical Care
Koert van Mensvoort	Next Nature
Tilde Bekker	Playful Interactions
Koen van Turnhout	Social Interaction
Emilia Barakova	Social Robots & Humanoids
Martijn Verkuil	Virtues & Values
Anne de Gersem & Michel Peeters	Wearable Senses
2009/2010 SEMESTER 1	THEMES
Jacques Terken	AutoMobility
Sander Mulder & Oscar Tomico	Discovering & Learning
Marco Rozendaal	Experiences & Emotions
Rombout Frieling	Light, Space, Time, Move
Wei Chen	Medical Care
Koert van Mensvoort	Next Nature
Tilde Bekker	Playful Interactions
Jun Hu & Lucian Reindl	Realities
Koen van Turnhout	Social Interaction
Emilia Barakova	Social Robots & Humanoids
Martijn Verkuil	Virtues & Values
Anne de Gersem & Michel Peeters	Wearable Senses
2009/2010 SEMESTER 2	THEMES
Jacques Terken	AutoMobility
Sander Mulder & Oscar Tomico	Discovering & Learning
Marco Rozendaal	Experiences & Emotions
Rombout Frieling	Light, Space, Time, Move
Wei Chen	Medical Care
Koert van Mensvoort	Next Nature
Tilde Bekker	Playful Interactions
Jun Hu & Lucian Reindl	Realities
Emilia Barakova	Social Robots & Humanoids
Martijn Verkuil	Virtues & Values
Maarten Versteeg	Wearable Senses

2010/2011 SEMESTER 1	THEMES
Jacques Terken	Automobility
Joep Frens	Complexity & Quality
Oscar Tomico	Discovering & Learning
René de Torbal	Experiences & Emotions
Wei Chen	Health Care
Harm van Essen	Light, Space, Time, Move
Koert van Mensvoort & Martijn Verkuijl	Next Nature
Tilde Bekker	Playful Interactions
Jun Hu	Realities
Maarten Versteeg	Wearable Senses

2010/2011 SEMESTER 2	THEMES
Jacques Terken	Automobility
Joep Frens	Complexity & Quality
Oscar Tomico	Discovering & Learning
Wei Chen	Health Care
Harm van Essen	Light, Space, Time, Move
Koert van Mensvoort & Martijn Verkuijl	Next Nature
Tilde Bekker	Playful Interactions
Jun Hu	Realities
Maarten Versteeg	Wearable Senses

2011/2012 SEMESTER 1	THEMES
Miguel Bruns	Changing Behaviour (CB)
Wei Chen	Comfort & Bonding in Health Care (CBinHC)
Harm van Essen	Light, Time, Space, Move (LTSM)
Koert van Mensvoort	Next Nature (NN)
nobody	Out of Control (OoC)
Tilde Bekker	Playful Interactions (PI)
Maarten Versteeg	Wearable Senses (WS)

2011/2012 SEMESTER 2	THEMES
Miguel Bruns	Changing Behaviour (CB)
Wei Chen	Comfort & Bonding in Health Care (CBinHC)
Harm van Essen	Light, Time, Space, Move (LTSM)
Koert van Mensvoort	Next Nature (NN)
nobody	Out of Control (OoC)
Tilde Bekker	Playful Interactions (PI)
Maarten Versteeg	Wearable Senses (WS)

2012/2013 SEMESTER1	THEMES
Miguel Bruns	Changing Behaviour (CB)

Wei Chen	Comfort & Bonding in Health Care (CBinHC)
Harm van Essen	Light, Time, Space, Move (LTSM)
Koert van Mensvoort	Next Nature (NN)
Mathias Funk	Out of Control (OoC)
Tilde Bekker	Playful Interactions (PI)
Maarten Versteeg & Pierre Lévy	Wearable Senses (WS)

2012/2013 SEMESTER 2	THEMES
Miguel Bruns	Changing Behaviour (CB)
Wei Chen	Comfort & Bonding in Health Care (CBinHC)
Harm van Essen	Light, Time, Space, Move (LTSM)
Koert van Mensvoort	Next Nature (NN)
Mathias Funk	Out of Control (OoC)
Tilde Bekker	Playful Interactions (PI)
Maarten Versteeg & Pierre Lévy	Wearable Senses (WS)

20: CAPACITY GROUPS

During the period 2006/2007 ID had three capacity groups. Since 2008 ID consists of four capacity groups. These four capacity groups and their respective professors are:

Designed Intelligence (DI; since 2001)

- Prof.dr. G.W.M. Rauterberg (head): Human Communication Technology
- Prof.dr.ir. L.M.G. Feijs: Industrial Design of Embedded Systems
- Prof.dr. S. Bambang Oetomo (part-time): Pediatric Applications of Ambient Intelligence

User Centered Engineering (UCE; since 2003)

- Prof.dr.ir. J.H. Eggen (head): User Centered Engineering
- Prof.dr.ir. J.B.O.S. Martens: Visual Interaction
- Prof.dr. Panos Markopoulos: Design of Awareness Systems and Ambient Experiences
- Prof.dr.ir. R.P.G. Collier (part-time, until 2007): Experimental Linguistics
- Prof.dr. B. Schouten (part-time, since 2011): Serious Gaming

Designing Quality in Interaction (DQI; since 2006)

- Prof.dr. C.J. Overbeeke (head until 2011): Intelligent Products and Systems Design
- Prof.dr.ir. Caroline Hummels (since 2011 head): Design Theory
- Second full professor to be appointed
- Prof.dr. E.H.L. Aarts (part-time, until 2010): Design for Ambient Intelligence
- Prof.dr. P. Marti (part-time, since 2012): Cultural-based Design

Business Process Design (BPD; since 2008)

- Prof.dr.ir. A.C. Brombacher (head until 2011): Business Processes in Industrial Design
- Second full professor to be appointed
- Prof.dr.ir. P.H. den Ouden (part-time): Industrial Aspects of Designing Intelligent Systems, Products and Services
- Prof.dr.ir. K. Dorst (part-time): Theory of Designing Intelligent Systems
- Prof. Ad van Berlo (part-time, since 2011): Business Design and Entrepreneurship

Groups profile

To realize our mission the contributions from our four capacity groups are essential. Each of the groups will develop new knowledge and skills and bringing this into teaching when working on their fundamental research questions. Each group, with its own special focus and research lines, works on scientific design. For each of our capacity groups the cooperation with the other four groups is of utmost importance as this is the added value of being part of ID. A summary per capacity group is provided below.

Designed Intelligence (DI)

The general research areas are threefold. Adaptive systems: The main research question is how to integrate adaptive technology into the design of intelligent; products, systems and services. If the product can adapt to the user, this will improve ease of use, increase pleasure of use and make more efficient use of resources. Adaptive technology includes feedback theory, optimization algorithms, and learning algorithms. The main challenge is how to integrate these with interaction design, with user-centred engineering and with business process design while hiding the internal complexities of the technology. Autonomous systems: The main question is how to design the autonomy of products, systems and services in order to optimize human experience. The goal is not to make products as autonomous as possible but to transform existing autonomous system technology into meaningful designs, which contribute to the quality of people's lives. Important topics are human robot interaction, mental models, brain models, complexity of human behaviour, and social experience. Aware environments: The main question is how to design environments, which acquire and interpret sensor data about the users and about the objects in the environment. An intelligent system is able to integrate and analyze this data and provide a reactive response, adaptive to the user's intentions and behaviour. Thus DI investigates how to design augmented and mixed reality systems, in which the physical and digital worlds complement each other. New functionality will push service providing, communication, pedagogy and entertainment to a higher level of perception and cognition.

User Centered Engineering (UCE)

Intelligent systems will continue to permeate the living and working environment of people, and, as a consequence, will transform how we use and interact with technology in the future. The technologically enhanced environment will become an active 'agent' mediating, or sometimes even actually taking part as an actor in, people's everyday social interactions. To ensure that these future opportunities are effectively turned into successful design propositions that truly add value to the life of people, the key research question that needs to be solved by the UCE group is: How to design intelligent systems, and the associated user interactions, such that they support and mediate people's social

⁹ Prof. Overbeeke unfortunately died in 2011.

interactions? This challenge needs to be addressed in close collaboration with the other capacity groups in the ID Department. It will be made operational through a number of related research questions that will be further investigated in the relevant application domains. The following sub-questions will guide the future research efforts of the UCE group: what are the salient aspects of the “User Experience” pertaining to the use and social embedding of intelligent and context aware artefacts and how to design for ensuring some of the most critical determinants for acceptance of such technologies, e.g. privacy, ease of use, trust, fun? In the area of embodied interaction, we need to extend our knowledge on: how to integrate multimodal interaction possibilities including visual, auditory and tangible interaction technologies to match people’s physical, cognitive and social skills and preferences in order to support natural interaction of people with an intelligent environment? In case the intelligent system takes the role of a transformative ‘agent’, we need to acquire scientific insights on: how to design intelligent artefacts (products) that persuade people to change their behaviour? The design of intelligent everyday environments urges us to develop methodological answers to the question: how to conduct scientific research ‘in-the-wild’ and over prolonged periods, i.e. outside the laboratory in realistic everyday life settings, including long-term changes of and adaptations to the environment?

Designing Quality in Interaction (DQI)

The general research question is: How to design for highly interactive systems? This research question is operationalized in several sub-questions, on the basis of the Gibsonian Theory of Perception (action-perception loop) and Phenomenological Philosophy (acting-in-the-world). These questions are not about method in the first place but try to clarify the core of the design process, focused on acting subjects in a societal environment. Each of the questions below opens up a new design research area. The projects belong to the core of DQI (although most of them are co-supervised by members of other groups) and as such generate the knowledge to co-operate with the other groups to reach the common mission statement of ID.

Business Process Design (BPD)

Due to the continuing influx of new technology and the increasing globalization of the market modern intelligent systems are increasingly ‘networked systems created by networked organizations for an increasingly global market’. In order to utilize state-of-the-art technology in a competitive manner the involvement of different industrial partners on a global level, each with their own specialization and operating within their own cultural context is currently required. The complexity and the dynamics of the market, especially with highly adaptive intelligent systems, requires a deep understanding of- and fast and high-quality interaction with- the earlier mentioned global market. Both these trends require that modern intelligent systems and the underlying business process that create and operate these systems will have to be designed hand-in-hand. The key-research questions in the BPD group, to be solved in close collaboration with the other groups in ID, are therefore: How to design intelligent systems, and the underlying

business models, for markets that are not yet there? Related sub-questions are: What are adequate (multi stakeholder), sustainable business models? What are the aspects of the (international) markets that have to be taken into account in the design process? What are adequate (design) information flows able to handle the extreme degree of dynamics and uncertainty that is required?

21: REFLECTIONS BY SUPPORTING STAFF

Henri in 't Groen,
*reflection on the
role of educational
coordinator*

In the period between the academic year of '06/'07 and '12/'13 our organization has gone through quite some changes. In the year of '06/'07 the organization was still exploring possibilities and directions within our educational system. This was applicable both to the content of our educational program, as well as the process of delivering it. This led to an organizational culture in which staff and students were stimulated to find their own way and/or means in executing given tasks. At that time the number of people involved was much smaller. Besides, our organization was divided in smaller parts. This made it possible to explore and work in a very flexible way: communication within a small group was informal and easily done!

But then the Department started to grow very fast and there was a need for adapting to this bigger size. Wherever possible, the Department used aspects that already had proven to be effective and applied it to a bigger group: the need for an autonomous and explorative culture was not that big anymore. Nevertheless, the much-needed cultural change wasn't completed yet. This is leading to situations in which compliance to a general policy is sometimes a bit difficult (for both students and staff).

Herman Aartsen,
*reflection on
the role as
educational
electronics support*

When I was a child, my favourite pastime would be: taking apart old televisions and experimenting with electronic circuits. Naturally I chose to follow a technical education. When I started working for engineering company things became more serious. Engineers must follow specific methods to manage complex projects and produce predictable results. Unfortunately in doing so, much of the fun and the fascination are lost. New ideas are usually treated as potential risks rather than opportunities.

Coming to the faculty TU- ID I noticed things were completely different here. This place is buzzing with creativity and original ideas are highly valued. It is my task to help students and researchers turn their ideas into functional models. Usually they just need a short advice and then they are on the way. Sometimes I explain them about methods that I would follow as an engineer, but not too often. Students often surprise me what they can achieve without much knowledge, just by being persistent and open minded.

Jan Rouvroye,
*reflection on the
role of coordinator
D/search-labs*

I joined ID together with the other members of the BPD group officially in January 2008. At that time I was assistant professor (UD) within the BPD group. My main research task related to finalizing obligations from my previous department IE&IS (Industrial Engineering and Innovation Sciences) specifically coaching 3 PhD students. My educational task consisted of coaching and next to that I was involved in a number of assignments. For a number of reasons, I changed function in the second half of 2010. From that time onwards I have a dual function: half of the time lecturer (at this moment consisting mainly of coaching), the other half of my time I have a technical support coordination function (related to ID specific technical support). It is from the technical support perspective that I write this reflection.

What I did, is just start working with the support staff, learn to operate 3D printer and laser cutter, refresh my electronics skills, learn basics of 3D cad, and in the mean time observe how support was given, what materials, machines, tools were available and needed, and so on. Some of the observations (in random order) are:

- Some facilities are lacking for example a spray cabin for finishing prototypes, especially since students are asked to make “museum quality” prototypes.
- Due to the education program there are peak loads in required support, especially before the exhibition and also during timeslots for some modules and assignments.
- Requests for support can be very diverse due to the fact that students are free in their projects and competency development. Students can also be very ambitious in what they want to achieve, compared to their actual competencies.
- A major advantage found is the availability of a relatively low priced, easy programmable microcontroller platform (Arduino) supported by a large community, which enables students to learn with only little guidance, once they overcome initial fear.
- Within the department there are different opinions on the role of and the way to do prototyping. A committee is currently addressing this.
- Organizational embedding of technical support in the department is not very clear (yet).
- A positive surprise in the department is the positive and open attitude and intrinsic motivation of both students and colleagues, which for me is certainly one of the things I like most within ID.

After that we have started gradually changing the technical support, for example by using interns and/or student assistants for more routine tasks, preparing better for peak loads (for example by doing machine maintenance before or after expected peaks, organizing workshops for students to help them getting started, streamlining communication (for example one mail address for the laser cutter)). The plan is to continue improving gradually.

Some of my concerns relate to some of the observations mentioned before. The number of students increases; number of support staff is at best constant. Some optimizations are still feasible but there are limitations. Especially time available for support staff to keep up-to-date with or even be proactive towards new developments (which are picked-up by our students very fast) is quite limited as well as time for supporting researchers.

Main challenge for the future will be to improve or at least to still maintain the level of support and facilities as is despite the still increasing number of students. Integration of all the facilities in one location may help with that.

***Lenny Apon
reflection on
the role of Head
Educational Office***

In my experience as Head of the Educational Office it is not the easiest of tasks to execute your jobs and responsibilities in a Faculty that is in a more or less constant state of development. Even more so as this Faculty has established itself in a University that (still) uses systems and (planning) procedures, which are based on (neo) classical education patterns.

Virtually every task in the field of scheduling, planning, registration, use of various systems and supporting the management, ends up with you needing to find an “ID-customized” solution. The great challenge here is finding a transparent solution, which is in line with the educational vision of the Faculty, but also keeps in step with the rest of the University and can be explained to both students and teachers. Also there is the difficulty of keeping up with the timeline that has been set by the University.

Reflection 1

Many processes are still based on small numbers of students. In the coming years there has to be a changeover to adapt these processes to larger groups of students.

The greatest challenge is the fact that one process has consequences for almost every other process because of the individualistic character of the educational model.

An example: The Faculty works with a year planning based on the standard University year planning. Very specific adaptations have to be made each year, which follow from ID’s unique vision and to be able to reach ID’s specific targets. An important point of attention is the way time and events can be organized.

For instance: the end of wrapping up one semester and preparing the start of another one coincide, just as project planning coincides with assessments (midyear) or project planning with entering new students (at the start of the year).

Adaptation:

An attempt has been made to make the system more flexible by setting up the year planning via a different approach, in order to facilitate the organizing of time and events.

Reflection 2

A consequence of this type of individual, elective education is the complexity of processes and the very strict deadlines, which in turn has consequences for administration, scheduling and planning. Many tasks have not yet been computerized and much has to be done by hand. This means asking a lot from the educational support staff, such as a great deal of flexibility, an ability to cope with stress, and the ability to think in terms of challenges and solutions. In practice, it turns out that this is not everybody’s cup of tea, and vigilance is needed to ensure continuity in case of illness. In that sense, the Educational Office is a vulnerable part of the Faculty.

The individualistic character of this particular form of education is the reason that the supporting processes are complex and time-consuming.

Example: For the development of a student it is necessary to follow a different study plan. This deviation has direct consequences for the teaching schedule.

Adaptation:

More and better standardizing of processes and procedures in order to control the way time and events are organized.

Example: set a deadline for request of the above kind, so that necessary adaptations can be done in a timely fashion.

***Yolanda Hübner,
reflection on
the role of study
advisor***

As a study advisor I inform students regarding their studies and furthermore advise and support them regarding their study progress. My natural preference lies in coaching a student when possible. Coaching a student means to me giving support to the student while asking the student questions to facilitate his thought process in order to come to a set of options or actions. I want to help students find their way and I don't think that telling them which way to go would be the manner in which students benefit most.

What I most like about working with ID students is that they are young, intelligent individuals who are intellectually well capable of analyzing and reflecting on their personal situation. So why should I not encourage them to use their own capabilities? In my opinion they will benefit most from making their own choices and take responsibility for their actions. Of course I also give students advice when this is most applicable to their questions.

My way of approaching ID students seems to fit well within our educational model. From their first day at our Department we encourage students to think of their personal development and plan their learning activities accordingly. Therefore it seems that the majority of our students really quickly understand they can apply 'self directed and continuous learning' not only to their studies but also to their personal situation. Therefore they seem not to be surprised by my way of working with them and even appreciate it. They are used to think out options for themselves and to discuss them with an expert in that field. When I started at Industrial Design as an internship coordinator I was surprised to see how these 19-year-old students were so well able to reflect on what they had done and what this would mean for their future plans. I think it is great to see young individuals acting so professionally.

I don't have any experience as a study advisor within another Department. I see however that, in general, the other Departments have a different way in approaching students. Due to their educational model, more 'classic', students need to follow the same learning activities and there is little room for making choices themselves. The study advisor then seems to take more the 'advisor role' than the 'coaching role'.

22: FACILITIES

ICT facilities ID participates in the TU/e notebook project, which means that each first-year student can buy a notebook and software under special conditions. Own notebooks are also supported. Campus licensed software among which Adobe Design Suite, is available for download through the network. ID has separate licenses for department specific software. SolidWorks, a 3D CAD package, is available in a school license version, and a limited number of full educational licenses. CES Edupack, a materials and fabrication technologies database based on the well-known books of Ashby is also available for download.

Eindhoven University of Technology has devised a special digital study and work environment about education, called OASE, for all students and staff. OASE gives access to information about courses, subjects and examinations. You can register electronically for courses, work groups and exams. And you can also call up your own personal schedule, email and results through OASE.

A few years ago ID implemented a new document management system based on SharePoint, known within the department as IDCompass. This tool is used to document and store the portfolio of students and written feedback and assessment forms.

ID specific information for teaching staff and students is also available on the intranet pages. Important information is communicated to students by means of a bi-weekly e-mail based newsletter. An ID department specific news page website is currently under development.

Service desk To support students and staff members the department has a Service Desk for help with hard-and software problems, and for support with and access to other general facilities (for example lending of audio visual equipment). The ID Service Desk is staffed by a team of among others ICT staff members and student assistants.

Electronics Atelier The Electronics Atelier, located on the 4th floor in our main building (HG 4.40) is meant for education; it facilitates students who want to build electronic circuits. The electronics atelier provides the first level of electronics support for bachelor students. The atelier is also used for some assignments and workshops on electronics. The atelier has 12 working places, which can be used by Industrial Design students without prior reservation. Each working place is equipped with measuring equipment like an oscilloscope, function generator, power supplies, and a soldering iron. Student assistants from the Department of Electrical Engineering assist the students, working under the supervision of a senior staff member. The electronics atelier also has a website with electronics information (<http://www.eatelier.nl/>).

Since September 2012 students have to buy their own components. A number of component kits are currently offered through the student shop in the MetaForum

building. Starting September 2013 student association Lucid will start selling electronics components to students from within the electronics atelier supported by the department by means of providing budget for student assistants.

Photo studio The Photo Studio in HG 4.35 is equipped for high-quality photography of realized models, products prototypes, and products. The Photo Studio has lamps, product tables, tripods and a variety of backgrounds.

Sound studio The Sound Studio in HG 3.34 is equipped for sound design. It offers a wide range of possibilities for high-quality audio recording, generating, editing and listening.

Vertigo ID agreed to cooperate with the department of Architecture, Building and Planning in order to share a workshop. This department already had a well-equipped workshop situated in the Vertigo building, which has been adapted to the requirements and wishes of ID in the field of mechanical processes. Nowadays, in Vertigo a specialized team assists students from both departments in building prototypes and models in general. The most used production techniques are woodworking and working with foam, laser cutting, and to some extent and performed by staff member's metal machining and welding. Also located in the same space is a sales desk where students can buy common prototyping materials. These facilities are opened Monday to Friday from 08.00 until 17.00 hours. Plan is to open the workspace and sales desk longer starting academic year 2013/2014.

/d. search lab & Matrix. The ID department also has a small workshop, initially started for supporting researchers only, but currently also used by ID Master students. It features a few general purpose tables, 5 general electronics work spots with power supplies, and advanced oscilloscopes, and some hand tools. Next to that one work spot dedicated to work with SMD (Surface-mounted device) components to enable miniaturization.

On the mechanical part there are two workstations with a full license version of SolidWorks. Next to that there is a laser cutter and a state-of-the art 3D printer (Objet Connex 350) also usable by (master) students.

Next to that there is small woodworking workshop featuring among others a 3D milling machine in Matrix building. This is operated by ID staff but currently still under responsibility of the Architecture department. Also in that location is a small area for resin and silicone casting and a rig for tufting carpets.

Planned is to buy a cheap 3D printer (Second generation Cube *) especially to be used for bachelor students.

Theme based facilities. Theme Wearable senses has equipment in their space specific for their application area among which several general purpose and one industry standard sewing machines, an overlocker machine, a computer controlled embroidery machine, a heat press, a weaving

machine and a few knitting machines. These machines are usable by students that have attended an introductory instruction.

Theme Light, Time, Space and Move has specific equipment available for use with lighting installations (DMX controlled lights and related equipment). The theme has two test room with (remote) controlled lighting that can be used for experiments. Next to that they have a black box space; a space that blocks all external light in order to experiment with (effects of) light.

MetaForum TU/e has integrated all departmental libraries into one library located in MetaForum building. The library gives access to scientific literature both hands-on by lending books and also more and more literature is available electronically both on and off campus.

Next to that MetaForum offers all TU/e students around 900 studying spots, the Notebook service center, printing service, and student shop.

Labs For research purposes ID has several labs. These labs are also available for research by students.

Biofeedback Lab / Medical simulation lab

Location: HG 3.46

The Biofeedback Lab facilitates the development of biofeedback appliances and exploration of using body signals as input for a new generation of computer games.

The laboratory has an area of approximately 24 square meters, and is equipped to facilitate both medical and game-oriented projects. A high-speed measurement amplifier is available for EEG, ECG, EOG, EMG, EOG and GRS measurements, (32 EEG channels, 4 bipolar channels, 4 aux channels), including analysis software. Various simpler measurement systems with fewer channels are available for integration in custom prototypes and for student projects. Further, commercially available systems and games are available for demonstration and integration in custom projects (for example: MindSurfer, Journey to the Wild Divine etc.).

Part of the same space is used for the medical simulation lab. This lab facilitates the development of medical simulation tools for training health care professionals for example delivery simulator, simulator for Moro reflex & muscle tone, CPR Simulator and a simulator for learning to perform an infusion.

Car Simulator

Location: HG2.29

The Car Simulator, also called Drive Master Driving Simulator, provides a mobile Virtual Reality environment for creating a virtual driving experience. It consists of a driving simulator and a control station and is equipped with eye tracking sensors and

force feedback steering wheel. Scenarios can be created meeting specific experimental requirements, and different kinds of data can be logged and extracted in real time.

ConceptLab

Location: HG 3.42

The ConceptLab aims at bringing new forms of interaction, implemented within new combinations of hardware and software, within the reach of individual designers and small design teams (of up to four people). The current infrastructure includes high-end workstations coupled to graphical tablets with integrated displays, multi-touch surfaces, a large-sized stereo display and several video projectors, and a diversity of tracking technologies. The lab is used within the Masters module Designing with Complex Sensors, and by students to create prototypes that require more advanced sensors or video renderings. For more information, see <http://conceptlab.tue.nl>.

Cultural Computing Lab

Location: Corona building

This mixed reality installation, based on the narrative of 'Alice's Adventures in Wonderland' provides a technical and experimental platform to investigate research questions in the context of aware environments. The equipment contains one Virtual Reality Cave (five side projections, floor sensors, 3 x 3 x 3 m), two dedicated robots, eight high-end PCs including high-resolution graphic accelerator boards, high-resolution observation cameras, high-end video projectors and a stair lift. The installation is currently being rebuilt and upgraded. Next to the research activities, the installation has been also used for individual and team projects as a test bed for new concepts and ideas.

Flight Simulator

Location: HG2.29

The Flight Simulator Laboratory is a testbed built to simulate the business and economy class cabins of an average airplane. Six economy class seats, one business class seat, a small kitchen facility and a toilet are available. It allows simulation of long-haul flights to investigate empirically the reaction of different types of passengers in relation to new types of adaptive products and services (e.g. bio-signal based stress monitoring, changes of bio-clock etc.) related to the 'aware environments' and 'adaptive systems' research lines. The equipment includes a testbed, motion platform, nine high-end PCs including high-resolution graphic accelerator boards, touch displays, high-resolution observation cameras, high-end video projectors, ambient light displays and business class chair. The simulator has been available for student projects after the main research has been done. The design projects were about either the facilities such as the chairs or the experiences in travelling or with the multimedia entertainment systems.

Game Studio

Location: HG 2.17

The Game|LAB is a laboratory for: experiencing gaming systems, evaluating and testing games and game controllers designed in the department, and observing and analyzing gamer behavior and experience. The equipment includes a SONY HD TV, SONY PS2 console, Nintendo Wii console, and various older games and game controllers.

Robotics Lab

Location: HG2.91

The Robotics Laboratory focuses on two major research lines: Social robotics and Adaptive and Learning Agents. Research in the first topic is facilitated by the use of two Nao Aldebaran humanoid robots, and one iCat robot, and Lego robots. The NAO robots are used for training social skills of autistic children and other human-robot interaction experiments. The developed human-robot interactions are tested in realistic settings, such as in clinics with autistic children, elderly, etc. Neural and evolutionary algorithms as well as brain inspired models, together with scripts and scenarios have been used to make believable interactive robot behaviors. Theories as Laban movement analysis are utilized for the robot to express emotionally loaded movements or interpret these by humans or other robots. Furthermore research is conducted on the general social aspects of human-robot interaction, such as emotion recognition from movement and facial expressions. The long-term goal is to investigate how robots can easily be incorporated into our everyday lives. The second research line investigates techniques such as Learning by imitation, Reinforcement Learning, Evolutionary Game Theory, Swarm Intelligence to model multiagent systems, collective behavior, and stimulate interaction.

Vision Studio

Location: HG 5.95

The Vision Studio allows research into human movement and to try out new ideas using large screen visualizations. One project is the Interactive Visual Canon Platform (IVCP), which enables users to interact with recorded 'copies' of themselves, thereby allowing to compose choreographies with one's copies and further the investigation of how users adapt to their artificial copies. Users can interact with their alter egos, in particular within the framework of performances. The Vision Studio is open for researchers, PhD students, and students of the Bachelor and Master programs at Industrial Design.

The equipment consists of multiple cameras and an HD projector, professional audio equipment, and several Kinects. The Vision Studio is a lecture-hall sized room with large screen and can easily be darkened, and features as a 7.1 surround sound system. Each of the eight audio channels can be controlled separately through the computer, allowing, for instance, sonification of users' movements.

Experiential Design Landscapes

Our society is faced with a number of major challenges; the most significant of these include the aging society, the related challenge of increasing cost of healthcare, issues related to social safety/quality of life and attaining a sustainable level of energy consumption, in light of the available resources. More and more, industry indicates that they feel their responsibility to act upon these societal challenges, and that they acknowledge that by understanding the transformations in the models of society, industry and economy. By understanding the implications of these transformations for people and their business, they can better identify new opportunities and create innovative solutions for sustainable growth and business leadership while addressing social and environmental issues – bringing true value to people.

In many cases these major challenges can no longer be solved by the traditional linear business processes or even through the current concept of living labs. The new challenges require new disruptive solutions to create sustainable growth and a multiple stakeholder approach. To arrive at meaningful solutions, large industrial companies will have to cooperate with local companies, creative professionals, scientific experts, and build upon feedback from local users and interest groups. For industry, the “ideal” solution would be to combine the fast feedback loops of the living labs with the long-term rich and dynamic interaction of real-time use in the user’s natural context.

In response to this need, the department of Industrial Design at TU/e is working at creating Experiential Design Landscapes (EDLs): environments that are part of normal society (e.g., designated areas in cities, sport parks, etc.) where new systems/products/concepts can easily be introduced, adapted and refined. These environments are instrumented to a high degree to allow longitudinal analysis of new behavioral and usage patterns that (may) emerge as a consequence of a variety of design interventions. EDLs are based upon the principle of studying emerging behavior in a (near) real life context. EDLs have an open structure and are therefore much deeper embedded in the actual society than the traditional living labs.

EDLs are challenging researchers to leave the control and predictability of their lab-based environments and to move their research out into ‘the wild’. Through working with communities of users in their homes, in the streets, or at their places of work, over longer periods of time, researchers have a unique opportunity to gain an ecologically valid understanding of emergent behavior prompted by new design propositions.

23: REFLECTIONS BY GUARDIANS

Reflection Educational Committee The educational committee (Dutch OC) can formulate advice in educational matters. The advice given by the educational committee is helpful for the faculty council in formulating or approving decisions, and also helps the ID directors of education to get a better view, e.g. a view from various perspectives, of the consequences of existing or proposed measures.

To this end, the educational committee is composed of staff members and students, and is assisted in her tasks by a secretary. Apart from the Chairman, there are currently staff members for three research groups, these staff members are all heavily involved in educational matters, assignments, modules, assessments, etc. The committee has currently six student members, one for each year plus one representing the student association LUCID. Thus, various points of view are represented.

The educational committee can formulate formal or informal advices. Formal advices or comments have to pass majority votes in a committee meeting and will be expressed in a more formal way, whereas informal advice or feedback can be given by any member of the OC at any point in time. The latter measure was implemented to ensure a faster flow of information and feedback from the OC to relevant parts of the organization.

An advice normally pertains to educational matters, and includes not only the (changes in) formulations of OER (Education and Examination Regulations) and RR (Assessment Rules and Procedures), but may also concern proposed changes in, for instance, schedules or working conditions of the students and staff members regarding education. Anyone can approach the committee when they feel they have an issue that the OC needs to consider. In practice, students also find the way to the OC quite easily, directly or via the representative of their year.

When the proposals are made known to the OC they are being discussed, to determine whether they are fair and practical, and likely to be lawful. Other questions can be judged in terms of workload for students or simply common sense. In these discussions all members can participate on an equal footing, so that different points of view and types of expertise come to the fore, and various recommendations will be identified. Experience shows that different committee members care about different aspects, and that it is crucial that the committee has members that represent different perspectives in the faculty. Eventually, the committee tries to formulate an advice that does justice to the various points of view. Before the advice is passed on, it has to pass a majority vote.

If the committee feels it does not have adequate information to formulate the advice, certain students or staff members may be asked to gather further information before an advice is being formulated.

In principle this process works quite well, as it assures that voices of different stakeholders

are heard, but as the committee has only advisory status, the recommendations they formulate will not always be implemented. In particular, as there is considerable time pressure in many situations, deadlines are often too short, and, coming too late or without a proper preparation time, the view of the committee may not always get the full attention it deserves.

The OC has, quite recently, tried to address this problem through the mechanism of giving informal advice, which can be formulated quicker by individual members, and which may also anticipate on possible changes or foreseen problems. Still, we feel that the increased pace at which departmental processes proceed nowadays makes the committee work more difficult.

The OC gives its members a real opportunity to get a better view of the various forces that shape the faculty. Within the OC one can sense that the faculty is scaling up and getting more mature, and that procedures and rules get more formal and structured. There is some tension though between the high flexibility standards that come with competence-centered learning approach, and the need for more structure. In the future, this tension may increase even more, as, through the Bachelor College, the faculty becomes more exposed to decisions taken at the level of the university as a whole. It is clear that, despite the fact that the Bachelor College has embraced certain aspects of our educational model, like for instance coaching, that a faculty which really implements a competence-centered model can still, at times, act as a kind of (beneficial) stressor to the University as a whole which will make the whole stronger at a higher level. It remains to be seen how the University can accommodate this kind of tension in a constructive and creative way, to help it develop and grow.

Reflection
Departmental
Admission Board

The Departmental Admission Board (Dutch FTC) takes decisions about the admission of students to the master. This can concern students from the Netherlands or abroad who have a Bachelor degree from a university Bachelor programme other than those listed in the “doorstroommatrix” (listing Bachelor programmes giving unconditional admission) or students from within the Netherlands who have a degree at HBO level (professional school).

We base our decision on a judgement of several factors, which we consider of primal importance. In particular we look at their personal motivation, e.g. what kind of designer do they want to be, and do they fit in the mission of the faculty. This is mostly evident from their motivational letter. We also try to get a picture of their personal profile and affinity, as based on evidence like a CV, a portfolio, or the choice of particular electives, and working experience if available. Finally we try to assess their overall potential, as evidenced from GPA, the University where they study, grades for particular subjects, etc.

We monitor the progress of students who were admitted to the Master directly or to the homologation informally. While some foreign students experience problems or even fail,

this seems mostly to be caused by individual, or, in some cases, cultural difficulties, as we gather from feedback that we get through the study advisor.

One problem that we do have is that foreign students who are admitted will not always take up the offer, especially if we require them to enter the homologation semester, but also if they are admitted directly. Partly this happens because students subscribe for several universities. Another reason is that studying in the Netherlands creates a very significant financial hurdle for many foreign students, in particular for students from outside the EU for whom the tuition fees are high in combination with the fact that at TU Eindhoven, in contrast to foreign universities, only very few scholarships are available. The expenses of studying in the Netherlands increase further if students need to do a homologation Semester before entering into the Master programme; the expenses of this homologation Semester are not covered by a scholarship anyway. The limited number of students who accept our offer to enter into the Master programme also makes it hard to evaluate the soundness of our decisions.

A potential solution is to let students already work on their homologation while they are still at their own university. With universities where we have extensive cooperative ties, like Zhejiang University in China, we are exploring opportunities to do so, but in many other cases this simply cannot work.

For this reason we have started to reconsider whether it is possible to offer other ways to make students fit into our master, for instance by broadening the scope of acceptable student profiles.

The discussion whether and how this can be done is currently being initiated within the department.

Also, we are considering to arrange special crash courses and to open Bachelor courses to Master students to enable them to catch up with competences for which they have deficiencies because of their prior education.

Apart from differences in profile, we also observe that our students are far more autonomous than many foreign students. For this reason, foreign students may lag behind, especially in the beginning, so we may need a better system of coaching for our foreign students, and perhaps set up a buddy system, to help them to adapt.

***Reflection Board
of Examiners***

The task of the BoE is to assure that the quality level of the examinations at our department is maintained. Also, the BoE needs to take decisions in handling daily matters regarding special circumstances or requests. We grant dispensations and permissions; grant or reject appeals against assessment outcomes; decide on applicability of free minors, and deal with miscellaneous student requests. We also handle fraud cases, and decide whether to grant cum laude, etc. Furthermore we approve of the Education and Examination Regulations

(in Dutch: OER) and Assessment Rules and Procedures (in Dutch: RR). In addition, we take formal decisions on education and examination authorities of all staff members. We strive for fairness, consistency and practicality.

Matters of education policy are discussed with the director of education and other members of the education staff that determine and describe these policies. In the process of adopting and approving the Education and Examination Regulations, as well as the Assessment Rules and Procedures, we discuss whether the proposed policies are practical and fair. In these discussions we do of course concentrate on the motivation behind proposed policy changes from one year to the next.

In daily matters our basic principle is that we try to have a clear view of formal matters, and try (as much as possible) to delegate content related judgment to the relevant experts. We also try to relate new cases to previous ones, in order to apply similar criteria. When we find that certain decisions can always be taken on purely formal grounds, we try to establish a rule that allows us to handle cases without further discussion. In cases of conflicts or disputes, we take care to obtain information from all the sides involved.

In the meeting the study advisors are present, which is extremely helpful, as they are often well acquainted with the circumstances or problems surrounding individual cases. For appeals we get the appeal requests in writing (as made by the student who may get help from the study advisor in putting this in writing), we can use the assessment feedback that accompanies the attested verdict, and can also consult other documents, like coach feedbacks that can be found in the file of the student. Other information sources that we may use in reaching decisions are opinions of coaches about certain cases, and feedback from experts or assignors for certain subjects or competences. Of course, we get information about suitability for admission from the Departmental Admission Board (FTC), and we can receive written motivated cum laude requests from the coaches and assessors involved. Sometimes, BoE members may also consult other staff members informally to get a better view on the history or background of a certain case. In strict formal cases, like decisions about dispensations for dyslexia, for instance, we can base our decisions entirely on expert opinions.

We strive to maximize the quality of our decisions. In many cases, the key to good decision making lies in the fact finding before a decision is taken, and thus we do, in general, spend considerable effort to assure that relevant and reliable information surrounding a case is available when we need to make the decision.

Of course it is very important that we keep monitoring the consequences of our decisions. When we approve proposed changes to the assessment procedure, for instance, the full consequences of changes in procedures are not always completely foreseeable.

Fortunately, we have various ways to get sufficient insight in the consequences of our decisions, and the trends and developments surrounding assessments or other student cases:

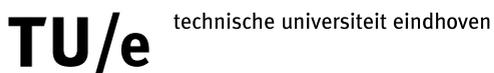
- As all our members are regularly involved in assessments, assignments, modules and other educational tasks, we have a clear view of the daily educational practice.
- Also, as we are also involved as student coaches, we often get a very realistic view of the situation that the students may find themselves in.
- As we are handling the appeal cases, we get some feedback on the perceived or real weaknesses of the assessment procedure, and can judge how it works out in practice, in particular for the more difficult or contentious cases.
- We have also, from time to time, looked into the overall statistics of verdicts, to see if we can identify any clear trends.
- We are often (mainly through the study advisors who are often very familiar with the cases in question) aware of the subsequent development of student cases, like appeals or requests.
- These feedback channels help us to keep an eye on the quality of most processes, and also help us to gain insight into the consequences of our own decisions. We believe that our current procedures and practices are quite acceptable, and work reasonably well, though there are also some causes for concern. As our system grants considerable freedom to students, we are confronted with many special cases, requests and exceptions. As a result we spend much of our time on current and daily affairs. It is important that we keep our procedures sufficiently streamlined to ensure the sustainability of our model if we see further student growth.

Concerns about the sustainability of our educational model have further grown with the advent of the university wide Bachelor college which has important consequences for our curriculum and assessment procedure, over which we only have very limited control. We have taken several initiatives to prevent possible problems. After consultations with the education department, we decided, in 2011, to install a Task Force, under the presidency of one of our members Dr. Pierre Levy, to organize an active reflection on the assessment process itself and on how it is monitored.

The TF delivered its report (see appendix 6.4) in April 2012 to the BoE. The report contained both the observations collected in the TF meetings as well as recommendations for improvements on each of the identified 7 points (a-g). These recommendations were discussed within the BoE and shared with the new assessment coordinator Mark de Graaf. Several of these recommendations are included in the new assessment procedure for the upcoming academic year. In order to simplify procedures it was also decided to ask Mark de Graaf to become member of the BoE, a decision that has since been approved by the Board of ID. Starting in the new academic year 2012/2013, Mark de Graaf is now the 4th member of the BoE.

At present, we are very pleased that, thanks to the direct participation of the assessment coordinator as a member of the board, we now have a direct and immediate view on the relevant developments.

24: EDUCATION AND EXAMINATION REGULATIONS FOR THE ID BACHELOR 2011/2012



Education and Examination Regulations for the Industrial Design Bachelor's Degree Program 2011 - 2012

Document	EER-Bachelor 2011 – 2012, English
For	All ID Bachelor's students and staff members
Period	Approved for the period 1 September 2011 to 31 August 2012
Author	Diana Vinke, on behalf of the Departmental Board
Type of document	Formal document, approved by the Departmental Council. Adjustments to previous EER are due to ID Edu 1.5. Comments and remarks from ID Education Committee and Departmental Council have either been processed where appropriate, or have been addressed in response to their advice by email
E-publication	ID website

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Annex 5 The STAR Program within the Industrial Design Bachelor's Program

The Board of the Industrial Design Department of Eindhoven University of Technology, TU/e

in view of sections 9.5, 9.15, subsection 1 under a, section 7.13, subsections 1, 2 and 3, section 9.38, under b, section 9.18, subsection 1 under a, and section 7.8b of the Higher Education and Research Act

in view of the approval of the Departmental Council

having heard the advice of the Departmental Education Committee

hereby adopts

the Education and Examination Regulations of the Industrial Design Bachelor's degree program

which reads as follows:

Chapter 1 – General provisions

Section 1.1 - General

article 1.1.1 - definitions

Where these regulations refer to 'student', 'he', 'him' and 'his', this is also meant to include 'she' and 'her'.

In these regulations, the following terms should be understood to mean:

- a. Act: the Higher Education and Research Act (*Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek*, also referred to as WHW);
- b. Student: a person enrolled in a degree program as a student or external student;
- c. Practical exercise: an educational activity in one of the following forms:
 - writing a thesis,
 - undertaking a project or experimental design
 - carrying out a design or research assignment,
 - doing a literature study,
 - doing an internship,
 - making a public presentation,
 - taking part in fieldwork or an excursion
 - conducting tests and experiments,
 - writing a position paper,
 - or taking part in other educational activities designed to acquire specific skills

- d. STU: the Education and Student Service Centre (*Onderwijs en Studenten Service Centrum*) of the TU/e;
- e. BSA standard: the standard which has to be met with in order to obtain a positive study recommendation, as referred to in article 2.2.1, paragraph three (a);
- f. Competency: an individual's ability to acquire, select and use a set of knowledge, skills and attitudes that are required for effective behaviour in a specific professional, societal or learning setting;
- g. Block: a course component, as referred to in art. 7.3 of the act, which is part of the Industrial Design bachelor's degree program, has the size of a semester, is composed of a specific set of curricular learning activities and is concluded with an assessment (see Course component in Glossary 1);
- h. Curricular learning activity: an educational activity which aims at competency development and which a student concludes either individually or in a team. A curricular learning activity may entail the following:
 - o an individual learning activity, referred to as 'assignment',
 - o an individual or team project, referred to as 'project',
 - o a minor in the bachelor's (which includes an internship and an exchange),
 - o an individual final Bachelor's project, referred to as FBP,
 - o self-directed learning activities during dedicated weeks, which are indicated as such in the year planning. The student determines and defines these self-directed learning activities together with his coach before the start of these weeks. The student together with his coach are responsible for the quality of these planned activities;
 - o or any other educational activity aimed at developing one or more particular competencies, which is organised or monitored by the department as part of or addition to the learning activities listed above.
- i. Assessment: the 'test', as referred to in art. 7.10 of the Act, which is an investigation into the student's development of the overall competence of designing and growth as a designer, including the evaluation of the outcomes of that investigation (see Interim examination in Glossary 1);
- j. Verdict: the notion of 'study result', the outcomes of the assessor's investigation and evaluation of the student's development of the overall competence of designing and growth as a designer;
- k. Final feedback: qualitative information in writing on the student's competency development, process, quality of deliverables and attitude, which the student receives at the conclusion of a curricular learning activity and which is input for the student's assessment;
- l. Showcase: a digital, interactive collection of learning evidence, framed in and enriched with reflections, to communicate and demonstrate development of the overall competence of designing, vision on designing and growth as a designer;

article 1.1.2 – the program

- i. In regard to the program, Annex 1 includes:

- a. the competence framework and composition of blocks ('the content of the program'), and the corresponding examinations,
 - b. if applicable, the content of specialisations
 - c. the selection of curricular learning activities by the student ('where necessary, the study components from which the student chooses to complete the optional part of the degree program'),
 - d. the organisation of practical exercises,
 - e. the student workload of the program and of each of its blocks,
 - f. whether the program is offered as a full time, part time or work-study curriculum,
 - g. the number and the sequence of the assessments, and the times at which they can be done,
 - h. the way in which the assessment of students' development takes place ('whether interim examinations are taken orally, in writing, or otherwise'),
 - i. where necessary, that successful completion of assessments is a condition for admission to other assessments,
 - j. where necessary, the obligation to take part in curricular learning activities with a view to participating in a particular assessment,
 - k. the minors from which a student can choose
 - l. the Master's programs to which the Bachelor's certificate provides direct admission,
 - m. the transitional arrangements as referred to in article 5.3,
 - n. the conditions under which the Board of Examiners may grant an exemption for one or more assessments on the basis of past successful assessment outcomes in higher education or competency development acquired outside higher education,
 - o. if so decided, which parts of the program, assessments and examinations are conducted in English
2. Annex 2 describes the transition program for external Bachelor graduates.
 3. Annex 3 describes further requirements of the BSA (binding study recommendation) standard of 30credits
 4. Annex 4 describes the conditions relating to study contracts.
 5. Annex 5 describes the details of the Star program within the framework of the Bachelor's program.
 6. The annexes constitute an integral part of these Regulations.

article 1.1.3 – qualities

Bachelor of Science Graduates in Industrial Design:

- are qualified to degree level within the 'science engineering & technology' domain;
- are competent in the relevant domain-specific discipline(s) to the level of a Bachelor of Science by having achieved the stage of 'Depth' for their overall competence of designing, which includes integration of the following competency areas, 1) ideas and concepts, 2)

integrating technology, 3) user focus and perspective, 4) social cultural awareness, 5) business process design, 6) form and senses, 7) teamwork and communication, 8) design and research processes, 9) self-directed and continuous learning and 10) descriptive and mathematical modelling;

Annex 1.a contains a definition of the overall competence of designing and the ten competency areas.

article 1.1.4 - language

1. Considering section 7.2 of the Act it has been determined that, contrary to the basic principle, programs, assessments and final examinations will completely be conducted in English.
2. Article 3.7 describes the rules governing the language of instruction and assessment for the minor(s).

Section 1.2 - Assessments

article 1.2.1 – frequency, form and sequence of assessments

1. Annually, the Departmental Board draws up the schedule for assessments which is based on the timetable for written interim examinations issued by the Executive Board, and which is announced at the start of the academic year.
2. Students conclude a block by doing an assessment. Assessments take place at the end of the semester in which students have been working on the curricular learning activities of the block concerned.
3. The sequence in which students have to do assessments is indicated in Annex 1g and ii.
4. For each block of the degree program the assessment is scheduled twice each academic year (see Annex 1g and ii).
5. For students in Blocks B1.1 through B3.1 the assessment is conducted by one assessor. For students in Block B3.2 the graduation assessment (Bachelor's examination) is conducted by an assessment panel. Assessors and assessment panels are allocated to students by or on behalf of the Board of Examiners.
6. The assessment of students' overall competence of designing and growth as a designer is based on the final exhibition, the showcase and a meeting between the assessor or assessment panel and the student.
7. Assessors and assessment panels determine a tentative verdict and justification. They discuss this and decide upon the final verdict at the plenary assessor meeting involved.
8. No more than one student will be assessed at a time, unless the Board of Examiners has decided otherwise.
9. For course components that are part of students' chosen TU/e minor, students will be given the opportunity to take interim examinations twice each academic year.
10. If the competence framework is modified or if the composition of a block is changed to the extent that this will affect the assessment, students will be given the opportunity to make use of a transitional arrangement with respect to the assessment.

11. In special cases the Board of Examiners can decide to deviate from the set number of times a student can participate in the assessment of a particular block, as well as from the form in and the time at which the assessment takes place, as indicated in Annex 1 under g through i.

article 1.2.2 - term of validity and storage times of assessment forms

1. In principle assessment verdicts are valid for an unlimited period of time.
2. If an assessment verdict is older than six years, however, the Board of Examiners may demand that the student take a supplementary or alternative assessment.
3. The Department must keep Assessment Forms for at least two years after the verdict for the assessment has been determined.
4. At all times the student needs to take care of backing up, archiving and storing his own digital files, that is the files he has created himself for curricular learning activities and possible inclusion in his showcase. In addition, the student is advised to make a hard copy of all the formal documents that served as input for his assessments, so final written feedbacks and Assessment Forms. These documents may be needed if the student wants to make use of the possibility to submit an appeal, as referred to in article 6.1 of the Assessment Rules and Procedures 2011-2012.
5. Students are not allowed to change their showcase in any way for at least six weeks after they have submitted their showcase for an assessment but, in any event, during the objections and appeal period. For this reason, students are required to hand in a copy of their showcase on a CD or DVD on the date and time they have to submit their showcase.

article 1.2.3 – participation in and registration for an assessment

1. A student must be enrolled in the Industrial Design Bachelor's degree program in order to participate in an assessment offered by this program, taking into account the sequence of assessments as specified in Annex 1 to the current Education and Examination Regulations under g and i. A student can only participate in an assessment or interim examination of a program other than the program in which he is enrolled if permission is granted by the Board of Examiners of his own program.
2. In order to be admitted to an assessment a student must register for this assessment at STU in the manner specified by STU, within the time limit set by the Department in the Year Planning.
3. In order to be able to take part in the assessment a student must provide identification at the exhibition and the meeting with the assessor or assessment panel, in the form of his student card or a valid proof of identity. If the student is unable to do this, he may not take part in the assessment.
4. Students are obliged to take part in each assessment that is scheduled in the assessment weeks at the end of the semester. They are required to have completed and submitted the assessment deliverables of the block concerned, on the date and time issued by or on behalf of the Departmental Board.
5. With reference to paragraph 4 of the current article, students are allowed not to take part in the assessment in case of circumstances beyond their control. This non-participation is only allowed with approval from the Study Advisor.

6. A student who has already participated in the assessment of a particular block twice without successful completion (a P-verdict) must consult the study advisor prior to registering for the assessment again. He has to discuss with the study advisor how the problem is to be addressed on the basis of a study plan he has drawn up himself.
7. With reference to paragraph 6 of the current article, a student who has registered for an assessment but fails to submit the assessment deliverables on the required date is considered to have participated in and consequently receives an H-verdict for the assessment concerned. This means that he has to do the same block - but with a new set of curricular learning activities - again.
8. If a student fails to register for an assessment in conformity with the provisions of paragraph 2 of the current article, he can be excluded from this assessment and consequently receive an H-verdict for the block concerned. This means that he has to do the same block - but with a new set of curricular learning activities - again.
9. The Board of Examiners determines whether a student meets with the conditions for admission to an assessment.
10. Where it is considered necessary for organisational or educational reasons, registering for curricular learning activities must occur according to the procedure and within the time limit set by the Director of Education. Students who do not comply with these rules when registering for a curricular learning activity, or who register after the date specified, are not allowed to participate in the period concerned. The Board of Examiners may make exceptions in such cases.

article 1.2.4 – withdrawal from an assessment

1. After registering for an assessment, a student is only permitted to withdraw after consultation of and approval by the Study Advisor in the course of the registration period for the assessment concerned. Withdrawal at a later date is allowed only in circumstances beyond the student's control, at the discretion of the Board of Examiners. Withdrawal must take place by notifying STU in the manner specified by STU.
2. If the student withdraws without approval, he can be excluded from participation in the assessment in the same assessment period. If exclusion applies, the student is considered to have taken part in the assessment and consequently receives an H-verdict for the block concerned. This means that he has to do the same block - but with a new set of learning activities - again. The provisions in this article also apply with reference to paragraph 6 of article 1.2.3.
3. In exceptional cases, the Board of Examiners may deviate from the provisions in paragraph 2 of the current article
4. The Board of Examiners can ask the advice of the department's study advisors or of the STU student advisors.

article 1.2.5 - assessment results

1. Assessments are conducted by an assessor (Blocks B1.1 through B3.1) or an assessment panel (Block B3.2).
2. The results of an assessment will be determined for each individual student.

3. The results of an assessment, as well as the investigation mentioned in article 1.3.1, paragraph 2 of the current Regulations, will be expressed in one of the following verdicts:

P : promotion to the next block

H: hold

C : conditional promotion to the next block

If applicable, a student who has received a P-verdict can be awarded with an “excellence” qualification, indicated as “E”.

4. A student has completed an assessment successfully if the verdict is a P. Exemption from an assessment will be considered equal to the assessment verdict P, indicated as: EX. Without prejudice to the provision of the first sentence a student can participate in the next block if the verdict for the assessment is a C.
5. The procedure for establishing a verdict and assigning credits, as well as the requirements for and consequences of these verdicts, are determined by the Director of Education and are included in the Assessment Rules and Procedures (see Annex I to ARP 2010 - 2011).
6. To the interim examination for course components of the student’s chosen minor at one of the other TU/e departments, article 1.2.6 of the TU/e OGO Model for Education and Examination Regulations 2010-2011 apply. Paragraph 4 of that particular article is as follows:
“4.a An interim examination is passed if the grade is 6 or higher, or with an assessment of EX (Exemption).
4.b A practical exercise is passed if the grade is 6.0 or higher, or with an assessment of EX (exemption), PA (Sufficient), GO (Good) or DN (Done).”
7. If a student has committed fraud the Board of Examiners may decide on an H-verdict for the assessment concerned. This provision also applies with reference to paragraph 6 of article 1.2.3.
8. The investigation by the assessor or assessment panel into the student’s development of the overall competence of designing and growth as a designer, as well as the justifications of the verdict are included in the assessment form in such a way that the student will be able to ascertain how the verdict has been determined.

article 1.2.6 - determination and notification of verdicts

1. Before the final verdicts are communicated to the students, they are discussed and determined at plenary assessor meetings, which are scheduled in the assessment weeks.
2. The chair of the plenary assessor meeting provides the department’s Educational Office with the final verdicts and any other required information immediately after this meeting.
3. The assessor or independent member of an assessment panel finalizes and publishes the Assessment Form as soon as possible after the plenary assessor meeting concerned; the deadline for this is three work days after the plenary assessor meeting.
4. If the assessor or independent member of an assessment panel is unable to meet with the requirements in the previous paragraph due to special circumstances, he will announce this to the Board of Examiners, stating the reasons. The Board of Examiners informs the student(s) involved of the delay immediately, and of the term within which the assessment

conclusions and feedback will be made known. Assessors cannot appeal to the provisions of this paragraph for blocks that are part of the propaedeutic phase.

5. Students will be informed of the verdicts by or on behalf of the Board of Examiners in written or electronic form one working day after the plenary assessor meetings have taken place.
6. Verdicts are recorded in the TU/e education information system (OWIS) as well as in the Assessment Form. Students cannot derive any right from the verdict as recorded in the Assessment Form.
7. In case of an assessment taking place in a deviating way, the Board of Examiners determines in advance how and within what period the student will receive a statement on the verdict, assessment conclusions and feedback.
8. Student are notified of their rights of perusal, as referred to in article 1.2.7 below, the right of evaluation, as referred to in article 1.2.8 below, and the possibility of submitting an appeal to the Board of Examiners and/or the Examination Appeals Board, as referred to in article 6.1 of the Assessment Rules and Procedures 2011- 2012.

article 1.2.7 - right of perusal

A student has access to, and thus has the opportunity to peruse the digital copy of his Assessment Form for at least the duration of the semester following the assessment concerned. This enables the student to print out the Assessment Form at any time.

article 1.2.8 - right of evaluation

1. The student has a right to a verbal clarification of the verdict, the assessment conclusions and feedback by the assessor (Blocks B1.1 through B3.1) or the independent member of the assessment panel (Block B3.2). The student himself needs to make an appointment with the assessor or chair concerned, who needs to enable this appointment within 15 working days after the Assessment Form has been published.
2. Without prejudice to the provisions in paragraph 1 above, if the student wants to make use of the possibility to submit an appeal against the verdict, the assessor or independent member of the assessment panel concerned needs to give the student the opportunity for an evaluation meeting in good time, enabling the student to submit the appeal within the time span referred to in article 6.1 of the Assessment Rules and Procedures 2011- 2012, paragraph 2, provision a.

Section 1.3 – Final Examinations

article 1.3.1 – registration and withdrawal

1. A student must register for a propaedeutic and final Bachelor's examination (Block B1.2 and Block B3.2 assessments) at STU in the manner specified by STU, within the time limit as set by the Department in the Year Planning, which is distributed at the start of the academic year.
2. The Board of Examiners will inform students in good time in what cases and when they plan to conduct an investigation and assessment, as provided in section 7.10, subsection 2 of the Act.

3. The rules governing withdrawal from a propaedeutic and final Bachelor's examination are the same as the rules that apply to assessments (see article 1.2.4 above).

article 1.3.2 – final examination periods and frequency

There will be two opportunities a year to take the final propaedeutic examination (the Block B1.2 assessment), and at least three opportunities per year to take the final Bachelor's examination (the Block B3.2 assessment). The dates of the Board of Examiners' meetings are included in the Year Planning, which is distributed at the start of the academic year.

article 1.3.3 – assessment of and result for a final examination

1. If a student has taken part in the assessment of a particular block more than once, the Board of Examiners will take into account the most favourable assessment verdict the student obtained when determining the result of the examination.
2. The result of the examination is either "PASSED" ("*geslaagd*") or "FAILED" ("*afgewezen*"), while retaining assessment outcomes. The result will depend on the assessment outcomes attained, as formally registered five working days before the date of the examination.
3. A student will have passed the examination, if he has completed the assessments that are part of this examination with a P-verdict, taking into account any exemptions that may have been granted to the student, on the basis of article 1.4.1 or 1.4.3 of the current Education and Examination Regulations and article 2.4 of the Assessment Rules and Procedures 2011-2012, or, if the investigation and assessment conducted by the Board of Examiners, as specified in paragraph 2 of article 1.3.1 in the current Regulations, has resulted in a P-verdict.

Section 1.4 - Approval by the Board of Examiners

article 1.4.1 - exemption from assessments

1. A written request for an exemption from the assessment of Blocks B1.1 through B3.1 will be submitted to the Board of Examiners no later than two months before the assessment takes place, taking into account the schedule of the Board of Examiners meetings as included in the Year Planning.
2. The request must include all evidence reasonably needed for an assessment of whether the student in question can be granted an exemption.
3. The grounds for which the Board of Examiners can grant an exemption from a particular assessment are exclusively related to the level, the content and the quality of the assessments or examinations the student in question has already completed successfully, or on the student's competency development acquired outside of higher education.
4. A decision not to grant an exemption will only be taken by the Board of Examiners after the student has been given an opportunity to be heard and will include reasons for the denial.
5. The Board of Examiners will decide within four weeks after receiving the request.
6. The decision to grant an exemption from an assessment will correspond to a P-verdict and will be registered as "EX".

7. The conditions for granting an exemption are included in the Assessment Rules and Procedures 2011 - 2012.

article 1.4.2 - modified composition of blocks

1. If a student wants a modified composition of a block, he must submit a substantiated request for approval to the Board of Examiners, at least four weeks before the start of the modified (part of the) block concerned, taking into account the schedule of the Board of Examiners meetings as included in the Year Planning. This request has to be submitted in writing and has to include justifications for the modification in terms of competency development.
2. A decision not to grant approval will only be taken by the Board of Examiners after the student has been given the opportunity to be heard and will include reasons for the denial.
3. The Board of Examiners will decide within four weeks after receiving the request or, if the request was submitted during the academic summer holidays, in the last week of these holidays.
4. The Board of Examiners may deviate from the provisions of paragraph 1.

article 1.4.3 – going through the program at an accelerated pace

1. If a student wants to go through the program at an accelerated pace by combining two Blocks into one, he must submit a request for approval to the Board of Examiners within seven working days after he has been notified of the verdict for his assessment prior to the semester in which he wants to combine two Blocks. This request has to be submitted in writing and has to include justifications for the composition of the combined Blocks in terms of competency development and overall development.
2. A student can only submit a request to go through the program at an accelerated pace if he received an “Excellence” qualification for the assessment in the semester prior to submission of this request.
3. A decision not to grant approval will only be taken by the Board of Examiners after the student has been given the opportunity to be heard and will include reasons for the denial.
4. The Board of Examiners will decide within two weeks after receiving the request or, if the request was submitted during an academic holiday, within ten working days after the holiday.

article 1.4.4 - flexible degree program

1. A substantiated request for permission to take a flexible degree program, as intended in section 7.3c of the Act must be submitted to the Board of Examiners in writing at least four weeks before the start of the program(s) in question, taking into account the schedule of the Board of Examiners meetings as included in the Year Planning.
2. A decision not to grant approval will only be taken by the Board of Examiners after the student has been given an opportunity to be heard and will include reasons for the denial.
3. The Board of Examiners will decide within four weeks after receiving the request.
4. The decision will state the degree program to which the flexible program is deemed to belong.
5. The Board of Examiners may deviate from the provisions of paragraph 1.

Section 1.5 - Functional Impairment

article 1.5.1 - studying with a functional impairment

1. A written request for an adjustment of curricular learning activities or assessments, or for special facilities to be provided based on a permanent functional impairment, should be submitted by the student in question three months before he is scheduled to take part in the curricular learning activities or assessments. The request should be submitted to STU.
2. The request needs to be accompanied by any documents reasonably required for an assessment of the request. These include at least a recent statement from a physician or psychologist or from a BIG (Individual Health Care Professions), NIP (Dutch Professional Association of Psychologists) or NVO-registered assessment agency (Dutch Association of Educationalists). If possible, this statement provides an estimation of the extent and likely duration of the functional impairment.
3. STU will send facility-related requests to the Departmental Board in so far as the request relates to facilities, together with its recommendations. If the request concerns facilities for the benefit of taking part in an assessment, STU will send it to the Board of Examiners, together with its recommendations.
4. Within four weeks after receiving the request the Departmental Board or the Board of Examiners respectively, will take the decision regarding adaptations or granting facilities. The Departmental Board or Board of Examiners respectively, will ensure that the quality and level of the curricular learning activities and assessments are still safeguarded.
5. Wherever possible, adaptations will be attuned to the specific functional impairment concerned. The facilities to be granted may consist of adjustments to the individual situation of the form or duration of curricular learning activities or assessments, or of practical aids.

Chapter 2 – Provisions Relating to Student Counselling and Study Recommendation

Section 2.1 - Student Counselling and Study Progress

article 2.1.1 - student counselling

1. The Departmental Board will provide counselling to students on the opportunities for courses of study inside or outside the degree program, including appointing one or more study advisors and appointing a coach to each student. Each Bachelor's program has at least one study advisor.
2. The Study Advisor will advise the student (either at the student's request or on the study advisor's own initiative) on all the aspects of the student's degree program, and will ensure, partly based on the student's study progress and whenever necessary, adequate referral to the competent bodies of TU/e, to STU student counsellors or TU/e confidential counsellors.

3. Whenever necessary but with the exception of topics that require confidentiality, the Study Advisor will consult and inform the student's coach.
4. If a student has received a positive study recommendation but has not yet obtained 60 credits, the study advisor will draw up a study contract together with the student. The contract is intended to help the student make progress with his study. See Annex 4 for more details of the study contract.
5. If a student has received a negative binding study recommendation the study advisor may advise him on or refer him to an alternative, more appropriate study program.

article 2.1.2 – monitoring study progress

1. The Departmental Board will ensure that assessment results of individual students are registered and are made known in good time in the TU/e education information system.
2. Where appropriate, the Departmental Board will organize a discussion of the results between the student and his/her Study Advisor.
3. If students are faced with study delay, the Study Advisor will inform them of opportunities to receive extra support or measures that may need to be taken in order to limit the delay as much as possible.

Section 2.2 – Binding Study Recommendation in the First Year

article 2.2.1 - binding study recommendation

1. Students who enrol for the first time on or after September 1st in the propaedeutic phase of this Bachelor's program are subject to a binding study recommendation. The binding study recommendation also applies to students who re-enrol in the propaedeutic phase, after they have terminated their enrolment before February 1st in a previous academic year (see paragraph 7 of the current article).
2. A written pre-recommendation on the student's progress will be issued after the assessment period of the first semester of the academic year in which the student has enrolled in a Bachelor's program for the first time, no later than 15 working days after the end of this assessment period. This pre-recommendation serves as a warning in the event that the student is making insufficient study progress.
3. At the end of the first year of enrolment for the propaedeutic phase of a Bachelor's program the student will receive a written study recommendation on continuation of the program:
 - a) a positive study recommendation is issued if the student has obtained at least 30 out of the 60 credits from the propaedeutic phase of the program and fulfils the additional requirements referred to in paragraph 4 of the current article. The student may continue with the Bachelor's program.
 - b) a negative binding study recommendation is issued if the student has obtained no credits during the propaedeutic phase of the program. The student is not allowed to continue with the Bachelor's program. In addition, the student will not be readmitted to the same Bachelor's degree program at TU/e for a period of three years.
4. The Departmental Board can impose additional requirements on the BSA standard of 30 credits. For the Industrial Design program there are no additional requirements for the BSA standard.

5. Students who have been issued with a positive study recommendation but who have only obtained 30 credits are required to draw up a study contract together with the study advisor. Given the rules governing participation in the assessments, they will only be allowed to participate in the second-year program if they have obtained a P-verdict or C-verdict for Block B1.2. See Annex 4 for details on the study contract.
6. Contrary to what is stated in paragraph 3 above, students who have enrolled for a Bachelor's degree program for the first time on or after February 1st of the academic year in question will receive a binding study recommendation on March 5th of the following academic year at the latest, taking account of the additional requirements referred to in paragraph 4 of the current article.
7. The binding study recommendation does not apply to students who have submitted a request to STU to terminate their enrolment in the Bachelor's degree program before February 1st of the academic year concerned.
8. In the event of personal circumstances, as recognized in article 2.2.2, the student will receive a binding study recommendation after the first semester of his second year of enrolment, taking account of the additional requirements referred to in paragraph 4 of this article.
9. The binding study recommendation is issued by the Board of Examiners on behalf of the Dean of the department.
10. No later than 10 days after the end of the assessment period of the second semester, the Board of Examiners will determine which students meet, do not meet or do not yet meet with the BSA standard.
11. Students who, after the period referred to in paragraph 10, meet with the BSA standard will receive a positive study recommendation from the Board of Examiners no later than 10 working days before the TU/e interim period.
12. Students who, after the period referred to in paragraph 10, do not meet with the BSA standard, will receive a letter of intention issuing a negative binding study recommendation no later than 10 working days before the start of the TU/e interim period.
Students can indicate within one week of receiving this letter whether they wish to be heard. If a student so wishes, he will be heard by the Board of Examiners, who will then take a final decision on a binding study recommendation no later than August 31st.

article 2.2.2 – personal circumstances

1. When a binding study recommendation is issued, account is taken of recognized personal circumstances.
2. Recognized personal circumstances are:
 - illness, physical, sensory or other forms of functional impairment or pregnancy;
 - exceptional family circumstances;
 - membership or presidency of the University Council, the Departmental Council, a program board or committee, or membership of the board of a foundation whose statutes allow for the exploitation of facilities or services intended for students, or a body that, in the opinion of the Executive Board, has equivalent status considering its tasks;
 - or other circumstances indicated by the Executive Board in which the student concerned performs activities relating to the organization and administration of the affairs of the university;
 - membership of the board of a student organization of a reasonable size and with full legal status, or of a comparable organization of reasonable size, where priority is given to promoting the general common interest and activities are genuinely performed to that end.

3. The personal circumstances referred to in the previous paragraph will only be taken into account if they are reported to the study advisor as soon as possible and no later than 20 working days after these circumstances have become relevant, by or on behalf of the student.
4. Students who wish personal circumstances to be taken into account must provide proof of these circumstances to STU.
5. The study advisor reports personal circumstances to the relevant Board of Examiners as soon as possible.
6. The Board of Examiners will ask the central committee on personal circumstances for advice on the personal circumstances submitted by students.
7. In its letter of intention issuing a negative binding study recommendation the Board of Examiners must specify, giving reasons, whether personal circumstances can be recognized and what the consequences are for the student concerned.

Chapter 3 – Provisions Relating to Minors

article 3.1 – minors

1. Every Bachelor's degree program includes a minor of 30 credits, of which at least three credits are for academic training.
2. Contrary to the first sentence of the previous paragraph, the minor for students in the Technische Innovatiewetenschappen program is incorporated in a program of 60 credits.
3. There are central minor regulations which, for example, arrange organisational matters relating to minors. These regulations will be posted on the website.
4. The boards of the departments providing the minor are responsible for its quality.
5. The boards of the departments providing and offering the minors will consult on the content and recognition of the minors.
6. The boards of the departments providing the minor will specify the content of the minor after consultation with the departments offering it.
7. The board of the department offering the minor will determine which minors will be included in their study program.
8. If a student has any questions or anything is unclear, he can approach the minor coordinator of the department offering the minor, this being the department in which he is enrolled in the Bachelor's program.
9. The minor dataset will be published on or before March 15th of the academic year preceding the academic year in which the minor will be provided. This dataset will enable students to determine which minors are available to them.
10. The ID minor is programmed as part of Block B3.1 (first Block of 3rd year program).
11. Each department will provide at least one minor that is also available to students from other departments.
12. There are five categories of minors:
 - a. minors that widen the scope of the study program;
 - b. minors that deepen the scope of the student's Bachelor's program. This includes an internal internship with one of the ID capacity groups or an external internship with a company or organisation in the Netherlands or abroad;
 - c. minors that offer the opportunity to progress to a non-corresponding Master's program (transition minors);
 - d. minors that are provided by other universities with which TU/E or the Department of Industrial Design has a cooperation agreement, either in the Netherlands or abroad;
 - e. free minors, which are composed by the student.

13. Students can only do one minor as part of the Bachelor's degree program. For ID students this means, for example, that if they do a minor at one of the other TU/e departments they cannot do an internship or exchange abroad as part of the Bachelor's degree program anymore, and vice versa.
14. Since the teaching for minors provided by other TU/e departments is programmed in the first semester only, this option is not open to ID students who do their Block B_{3.1} in the second semester of the academic year. Students to whom this situation applies, may submit a request to the Board of Examiners for a modified composition of their blocks (see article 1.4.2 above).
15. For a minor provided by one of the other TU/e departments students can receive a total of 27 credits. This means that ID students opting for such a minor need to take an additional three-credit course at one of the TU/e departments in order to get the full 30 credits for Block B_{3.1}.

article 3.2 – free minor

1. The proposal for a free minor should be a cohesive package with specified learning objectives for the minor as a whole.
2. The free minor must be comprised of as many as possible second and third year course components from programs other than the program for which the student is enrolled. Any first year course components should be limited to those that serve as preparation for the other course components included in the free minor.
3. The course components must be provided by a Dutch or foreign university.
4. The minor should have a ratio of approximately two : three between practical and theoretical work.
5. The minor course components must have no or hardly any overlap with the course components that are part of the student's major program.
6. The student's motivation in relation to his plans and ambitions should be convincing, and should clearly contribute to his development of the qualities of a Bachelor of Science graduate as well as the field of activity of the engineer.
7. The proposal must be submitted for approval to the Board of Examiners of the student's own program, before the term of enrolment for the minor (see article 3.5 below).

article 3.3 – academic training

1. The Academic Training platform has final responsibility for the content and the quality of the academic training program.
2. For ID students the academic training program is not part of the minor they do in Block B_{3.1}. Instead, ID students do the academic training program as part of the second-year program. Since the academic training program is scheduled for the first semester of the academic year only, ID students either do the academic training program as part of their Block B_{2.1} or as part of their Block B_{2.2}
3. For ID students the academic training program consists of the following 2 components:
 - a. taking a 'small' university lecture and
 - b. attending 14 lectures of Studium Generale,
4. The 14 Studium Generale lectures can be attended from Block B_{1.1} up to and including the Block in which students do the first component of their academic training component, so either Block B_{2.1} or B_{2.2}. Students are required to integrate this in their overall development and to include this in the showcase involved. The entrance requirement specified in article 3.4, paragraph 1, does not apply to these lectures.
5. The academic training program as described in paragraph 3 of the current article is a mandatory part of the Bachelor's degree program for all students at the TU/e. It is cross-

departmental and does not replace other elements of academic training that are specific to a given program.

6. The Departmental Board can submit a request to the Academic Training platform for an alternative for the academic training component. The request must be received by the Academic Training platform at the latest by December 1st of the academic year in which the minor will be given. The Academic Training platform will issue a recommendation to the rector within two weeks. The rector will hear the arguments of the Academic Training platform and the Departmental Board and will decide within four weeks after having received the recommendation.
7. The arrangement with respect to having attended all 14 Studium Generale as part of the Block in which students do the first component of their academic training programme, does not apply to students who start their Block B2.1 or B2.2 in September 2011. To them the transitional arrangements in paragraph m.3 of Annex 1 to the current Regulations apply
8. The arrangements with respect to the academic training program in paragraphs 2 through 6 above do not apply to students who start their Block B3.1 in September 2011, and to students who start their Block B3.2 and have not taken and completed their academic training program yet. To them the transitional arrangements in paragraph m.2 of Annex 1 to the current Regulations apply.

article 3.4 – admission to a minor

1. The general admission requirement is that students have successfully completed Block B2.2, which means they have received a C-verdict or P-verdict for the B2.2 assessment.
2. In exceptional cases, the department providing the minor can specify a minimum or maximum number of participants for a minor, in consultation with the central minor coordinator. In the case of a maximum number, the participants will either be selected by STU drawing lots or by the department providing the minor on the basis of motivation.
3. The Board of Examiners of the degree program taken by a student will decide whether he can be admitted to a given minor. STU has been mandated by the Boards of Examiners to check whether students meet with the general admission requirement. If there is any doubt, STU can request advice from the competent Board of Examiners.
4. On behalf of the Board of Examiners, STU will inform students by June 1st whether they meet with the general admission requirement and if they will be admitted to the requested minor if they enrol for it. For ID students doing their minor in the second semester this date is December 1st.
5. If the student does not meet the general admission requirement by June 1st or December 1st, respectively, the Board of Examiners will decide by September 1st or February 1st, respectively, whether he can still be admitted to the minor. STU will immediately inform the student of this decision.
6. If applicable, a student will be told why he cannot do the minor he specified (as his first choice).

article 3.5 – terms for enrolment

1. A student can enrol with the Board of Examiners of his own degree program in the period from April 1st to May 1st preceding the academic year in which he wishes to take the minor. A student who does the minor (Block B3.1) in the second semester of the academic year can register for a minor from November 1st to December 1st preceding the semester in which he is doing the minor.

2. If students want to do a minor provided by one of the other TU/e departments, they must specify a first and a second choice from the minors that are available to them.
3. Enrolment for a minor is final when STU confirms this to the student.

article 3.6 – approval of and admission to a free minor

1. Students who want to do a free minor must submit a written request for approval to the Board of Examiners of their own degree program before May 1st of the academic year preceding the academic year in which the student wishes to take the minor. For students who do their minor (Block B3.1) in the second semester of the academic year, this deadline is December 1st of the preceding semester.
2. The Board of Examiners will take a decision within four weeks after receiving the request for a free minor.
3. A decision not to grant approval will only be taken after the Board of Examiners has given the student the opportunity to be heard and will include reasons for the denial.

article 3.7 – language

1. With regard to section 7.2 of the Higher Education and Research Act, the departmental board can, contrary to the general rule, determine that the minor program is conducted in English.
2. The language in which the minor is given will be published on the website no later than February 1st preceding the academic year in which the minor can be taken.
3. Students have a choice of multiple TU/e minors, of which at least one will be conducted in Dutch.

article 3.8 –complaints and comments

The Board of Examiners of the degree program being taken by the student is authorized to act upon any complaints or comments from a student about the procedure or the content of minor course components. If necessary, the Board of Examiners will contact the Board of Examiners of the department providing the minor.

Chapter 4 – Certificate and Qualifications

article 4.1 – certificate and supplement

1. The certificate presentation will take place in public unless, in special cases, the Board of Examiners decides otherwise.
2. The certificate will, in any event, contain the information as specified in section 7.II, subsection 2 of the Act, together with the qualifications specified in article 4.2 (if applicable) and/or article 4.3.
3. At the certificate presentation the student will also receive a supplement.
4. The supplement will contain the information as specified in section 7.II, subsection 3 of the Act, as well as an authorised copy of the student's graduation assessment and, at the student's request, a list of completed curricular learning activities that are not part of the examination, if

the student concerned has completed them successfully before the Board of Examiners determines the final examination result.

5. Students who are eligible for a certificate can ask the Board of Examiners to delay the public presentation of their certificate.

article 4.2 – special qualifications for the propaedeutic year

This program has no special qualifications relating to the certificate for the propaedeutic year.

article 4.3 – special qualifications for the Bachelor’s program

1. A “cum laude” is awarded to the top 5% of our Bachelor’s graduates. The Board of Examiners may decide on the “cum laude” qualification for a student’s Bachelor’s examination
 - if the student has performed an excellent FBP, as apparent from the assessment panel’s written assessment feedback;
 - and if the student has “excellence” qualifications for at least three out of the six assessments that are part of the Bachelor’s examination (Blocks B1.1 through B3.2). Block B3.2 is among these three blocks that are concluded with an “excellence” qualification for the assessment.
2. The special qualifications specified in paragraph 1 above apply to students who started the first year of the Bachelor’s program on or after September 1st, 2010. For students who enrolled in previous years the special qualifications as referred to in the Assessment Rules and Procedures of the year in which they started the program are applicable. For clarity’s sake these have been included in paragraph m of Annex 1 to the current Regulations.

Chapter 5 – Final provisions

article 5.1 - objections and appeal

1. Based on the current Regulations, a written objection against a decision of the Departmental Board may be lodged with the Departmental Board within six weeks after this decision has been made known to the person or persons involved. This written objection must be sent to STU.
2. Based on the current Regulations, an administrative appeal against a decision taken by or on behalf of the Board of Examiners may be lodged with the Examinations Appeal Board within six weeks after this decision has been made known to the persons involved. The appeal must be submitted to STU.

article 5.2 - amendments

1. An amendment of the current Regulations will only apply to the current academic year if it can reasonably be assumed not to harm students’ interests.

2. An amendment of these Regulations cannot backdate any decision already taken with respect to a student.

article 5.3 - transitional arrangement

1. If the current Regulations, including the Annex, are amended the Departmental Board will make a transitional arrangement, if necessary. The transitional arrangement will be incorporated in the corresponding Annex.
2. The transitional arrangement will always include the following:
 - a. regulations regarding exemptions that may be obtained based on assessments already successfully completed, and
 - b. the term of validity of the transitional arrangement.

article 4.1.5 - effective date

These Regulations replace all previous versions and shall become effective on September 1st 2011.

Drawn up by the Departmental Board.

Annex 1 Annex to Article 1.1.2, First Section of the Education and Examination Regulations for the Industrial Design Bachelor's Degree Program

a. Competence framework, composition of Blocks and related final examinations

The Department of Industrial Design has the following mission for both the Bachelor's and Master's course:

"Educating unique opportunity creators for societal transformation through intelligent systems."

In this mission statement systems are defined as "networked technology, products, services and users within a societal context, and the interaction between them".

The ID program is competency-centred, based on an educational model in which learning and working come together. A competency is defined as "an individual's ability to acquire, select and use the knowledge, skills and attitudes that are required for effective behaviour in a specific professional, social or learning context". The metaphor for the underlying educational concept is 'the student as a junior employee'. The program does not consist of lecture-based courses that students complete with tests, nor of projects in which students (only) learn to apply previously acquired knowledge. A key notion in competency-centred education is integration: students acquire as well as apply new knowledge, skills and attitudes in an authentic setting. Bachelor students develop their competencies by doing learning activities such as assignments, projects, self-directed learning weeks, exhibitions, workshops and symposia. The contexts for projects are themes. Current themes, for example, are "Wearable Senses" and "Out of Control". Most of these projects have a real client, often somebody from industry or one of ID's external coalition partners.

The teaching roles that ID staff members have are part of the competency-centred learning environment. Their primary role is facilitator of student learning, from various perspectives such as coaching students on their project or development process, or sharing and making specific expertise available. From these various perspectives staff members give verbal and written feedback on the progression that students show in their competency development and on the quality of their deliverables.

Students document the development of their overall competence of designing and vision on designing in a digital portfolio. In this portfolio they store their work results and feedback from learning activities. In addition, they reflect on the quality of their deliverables, their competency development, design process and learning process and attitude across the various learning activities they have done in a semester. Their coach can use this portfolio as a coaching tool. Students use all these materials to create their showcase, which is a crucial component of the end-of-term assessment. The focus of the showcase is students' overall growth as a designer, their development of the overall competence of designing, and their vision on designing.

For ID students and staff a competence framework has been defined. The overall competence of designing is shaped by the integration of students' competency development and profile; the quality of their deliverables; their control over the design process and performance of activities in the reflective transformative design process; and their overall attitude (professional and personal). The ten competency areas enable designing. They either relate to the content of the system to be designed, to the approach needed for the act of designing or

to becoming a designer / unique opportunity creator. The ten competency areas are listed and defined below.

1. Ideas and Concepts

Develop visions, innovative ideas and concepts through creativity techniques, experimentations and the translation of research.

2. Integrating Technology

Explore, visualize, create and demonstrate innovative concepts and experiences using technology, as well as analyze the technical and economic feasibility of complex designs in which technology is integrated.

3. User Focus and Perspective

Understand human characteristics, goals and needs, and the context of use; create empathy with users throughout the design process; and design user-system interaction for user experiences.

4. Social Cultural Awareness

Drive the design process from an awareness and understanding of developments in society, envision ones designs in society, put the development of systems in a broader perspective, and take position in and evaluate the impact and mediating role of a system, product or service on society.

5. Business Process Design

Model, analyze and (re)design industrial business processes required for the successful introduction of intelligent systems, products and related services into the market.

6. Form and Senses

Experience and develop – through doing and abstraction - aesthetical (physical) languages that connect thought and (dynamic) form, in order to communicate specific properties of the design concept.

7. Teamwork and Communication

Work together towards a common goal using all strengths within a team and communicate opinions, ideas, information and results clearly and convincingly.

8. Design and Research Processes

Master the design process and the research process, and adjust these processes to the demands of the task at hand.

9. Self-directed and Continuous Learning

Take responsibility for and give direction to personal development, based on a continuous process of self-reflection and out of curiosity for future developments in technology and society.

10. Descriptive and Mathematical Modelling

Be able to create and apply descriptive and mathematical models by using formal and mathematical tools, in order to justify design decisions and support the design of complex, highly dynamic and intelligent systems.

The Bachelor' program comprises a propaedeutic examination and is concluded with the Bachelor's examination, consisting of the Blocks (course components) below with the credits and curricular learning activities mentioned, respectively.

- Propaedeutic examination:

Year 1	<p>Block B1.1 (30 credits), Task code DDB11</p> <ul style="list-style-type: none"> - one 96-hour introduction in competency-centred learning and one 48-hour assignment - 1 project * - Self-directed learning activities in dedicated weeks - Studium Generale lectures as part of Academic Training - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on development, such as (project-related) workshops
	<p>Block B1.2 (30 credits), Task code DDB12</p> <ul style="list-style-type: none"> - three 48-hour assignments - 1 project * - Self-directed learning activities in dedicated weeks - Studium Generale lectures as part of Academic Training - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on development, such as (project-related) workshops

- Bachelor's examination:

Year 2	<p>Block B2.1 (30 credits), Task code DDB21</p> <ul style="list-style-type: none"> - three 48-hour assignments or two 48-hour assignments and Academic Training (either task code oUC11, oUC12 or oUC14, together with oUC25) ** - 1 project* - Self-directed learning activities in dedicated weeks - Studium Generale lectures as part of Academic Training - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on development, such as (project-related) workshops
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	<p>Block B2.2 (30 credits), Task code DDB22</p> <ul style="list-style-type: none"> - three 48-hour assignments or two 48-hour assignments and Academic Training (either task code oUC11, oUC12 or oUC14 , together with oUC25) ** - 1 project * - Self-directed learning activities in dedicated weeks - Studium Generale lectures as part of academic Training - Proposal for minor/internship/exchange - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on development, such as (project-related) workshops
Year 3	<p>Block B3.1 (30 credits), Task code DDB31</p> <ul style="list-style-type: none"> - Minor, which also includes internship and exchange; *** - Self-directed learning activities in dedicated weeks - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on development, such as (project-related) workshops
	<p>Block B3.2 (30 credits), Task code DDB32</p> <ul style="list-style-type: none"> - Either one or two 48-hour assignments - Final Bachelor Project (FBP) * - Self-directed learning activities in dedicated weeks - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on development, such as (project-related) workshops

* Projects are performed individually within a team, with an increase of the individual performance and a decrease of the team performance as students progress through the Bachelor's program

** Students need to do and conclude the Academic Training component in Semester A of the academic year. This means that, depending on whether or not students have a study delay, they either do their AT as part of Block B2.1 or Block B2.2. In case students get an H-verdict for the Block in which they include their Academic Training, students need to do a retry of this Block but with a new set of learning activities. This implies that they do not have to redo the same Academic Training component, but should address the development of their academic skills in assignments or their project, if this is required due to the reasons for the H-verdict.

*** A minor provided by the other TU/e department is a program of 27 credits. If students choose this type of minor they have to take an additional 3-credit course in order to get the full 30 credits of Block B3.1

b. Content of the specializations

There are no specialisations in the Industrial design Bachelor's program.

c. The selection of curricular learning activities

Each of the six Blocks is composed of a particular set of curricular learning activities in terms of type and number, as mentioned in paragraph a.2 above. Within the boundaries of this set composition, students determine and select their individual set of curricular learning activities that fits in with their envisioned overall development for the semester concerned, as laid down in their personal development Plan. If – given their envisioned development - students need a set of curricular activities that deviates from the default set of activities for the Block concerned, they may submit a request for a modified composition of their Block to the Board of Examiners (see art. 1.4.2 of the current Regulations).

d. The organisation of practical exercises

The practical exercises as mentioned in paragraph c of article 1.1 are integrated in the curricular learning activities as mentioned in paragraph h of article 1.1.1.

e. Student workload of the program and of each of its course components

The student workload of the program is 180 credits. The student workload of the Blocks (course components) is indicated in paragraph a. of Annex 1.

f. Form of the program

The program is offered as a full time program.

g. Number and sequence of the assessments

The program has six assessments, one on each of the Blocks (course components) mentioned under a. They are administered in the order indicated in paragraph i..

h. Format of the assessments

The assessments of the Blocks listed in paragraph a. are conducted as indicated in article 1.2.1 of these Regulations. A more elaborate description of the various components of the assessment process is to be found in Annex 1 to the Assessment Rules and Procedures 2010 – 2011.

i. Conditions for admission to assessments

Students can only be assessed on the following Blocks if the assessment of the Block specified has been completed successfully, which means with a P-verdict:

Assessment of Block B1.2 after successful completion of Block B1.1;

Assessment of Block B2.1 after successful completion of Block B1.2;

Assessment of Block B2.2 after successful completion of Block B2.1;

Assessment of Block B3.1 after successful completion of Block B2.2;

Assessment of Block B3.2 after successful completion of Block B3.1. Successful completion of the minor also includes a C-verdict in case the student takes a minor at another TU/e department and has a minimum of 21 credits out of the 30 credits.

j. Obligation to take part in curricular activities with a view to participating in a particular assessment

The focus of the end-of-term assessment is on student's overall development as a designer. The core of the assessment is not about task completion of curricular learning activities but about student's development as achieved in their curricular learning activities, and the way in which this has shaped their overall development as a designer. If students do not conclude a particular learning activity, though, they are expected to justify this in their showcase and to demonstrate that they have achieved their envisioned development in an alternative way.

k. Minors from which the student can choose

Within Block B3.1 (first half of the 3rd year program) students need to choose a minor. A minor can either widen or deepen the scope of the student's program, or offer the student the opportunity to progress to a non-corresponding Master's program at TU/e or at another university of technology. In practice this means that a minor includes the following options:

- a minor provided by another TU/e department (either a widening or a transition minor). See the minor matrix on the STU website:
http://w3.tue.nl/nl/diensten/stu/onderwijs/major_minor/minoren/minormatrix_2010/
- a minor provided by another university with which TU/e or the Department of Industrial Design has a cooperation agreement. If this is a university abroad, this minor is called an exchange (deepening minor);
- an internal internship with one of the ID capacity groups (deepening)
- an internship at a company or organisation outside of TU/e (deepening). Such an internship position may either be in the Netherlands or abroad;
- a free minor, which is composed by the student and needs to be approved by the Board of Examiners. A free minor is likely to be widening but may also be a deepening or a transition minor.

l. Corresponding Master's degree programs

The degree certificate of the Industrial Design Bachelor's examination provides direct access to the corresponding Master's degree program of the higher education institutions specified below:

- Eindhoven University of Technology
- Delft University of Technology
- University of Twente

m. Transitional arrangements**m1. with respect to the “cum laude” qualifications**

1. The degree qualifications specified in the current Education and Examination Regulations apply to students who started the first year of the Bachelor’s program from September 1st 2010 onwards. For students already enrolled for the Bachelor’s program in previous years, the arrangements in subsection 2. below apply:
2. The Board of Examiners may award the “cum laude” qualification for the Bachelor’s examination if
 - the student has performed an excellent FBP, as apparent from the project coach’s written feedback, and;
 - and the student has “excellence” qualifications for two out of the four assessments that are part of the Bachelor’s examination (Blocks B2.1 through B3.2) . For Bachelor’s Blocks assessed before September 2008 verbal excellence statements in the assessment form concerned are an equivalent of the formal ‘excellence’ qualification. Block B3.2 needs to be among the two Blocks that are concluded with an “excellence” qualification for the assessment.

m2. with respect to the academic training component

1. To students who either start their Block B3.1 in September 2011 or who start their Block B3.2 in September 2011 and have not taken and completed their academic training component yet, the arrangements with respect to the academic training program in paragraphs 2 – 6 of article 3,3 and with respect to the minor in paragraph 15 of article 3.1 of the current Education and Examination Regulations do not apply. To these students the arrangements of the previous academic training program still apply, which will be offered one more time in the first semester of academic year 2011 – 2012, with a retry of the written examination in the second semester. These arrangements are laid down in the Education and Examination Regulations 2010-2011. For clarity’s sake they have been included below:
2. The Academic Training platform has final responsibility for the content and the quality of the academic training part of the minor.
3. For students who do their minor at another TU/e department, there are two ways of completing the academic training in the minor:
 - a. by taking a ‘large’ university lectures (three credits),
 - b. by taking ‘small’ university lectures (two credits), in combination with 14 lectures from Studium Generale (one credit),
 - c. for ID students who do their minor physically outside TU/e, the Departmental Board has arranged an alternative option: either attending an introductory lecture and writing a paper on a selected subject (three credits), or attending an introductory lecture and writing a paper on a selected subject combined with 14 lectures from Studium Generale (three credits in total).
4. The Studium Generale lectures can be taken during the entire Bachelor’s program. The entrance requirement specified in article 3.4, paragraph 1, does not apply to these lectures.

5. The academic training component as described in the paragraph 2 of the current article is a mandatory part of the minor for all students at the TU/e. It is cross-departmental and does not replace other elements of academic training that are specific to a given program.
6. The Departmental Board can submit a request to the Academic Training platform for an alternative to the three-credit academic training component. The request must be received by the Academic Training platform at the latest by December 1st of the academic year in which the minor will be given. The Academic Training platform will issue a recommendation to the rector within two weeks. The rector will hear the arguments of the Academic Training platform and the Departmental Board and will decide within four weeks after having received the recommendation.
7. Students who want to do their minor physically outside TU/e can also propose their own alternative to the academic training option stated in paragraph 2.c above. They must submit their proposal to the Board of Examiners before the term of enrolment (see article 3.5 below). The Board of Examiners will inform the Academic Training platform about the chosen alternative.
8. Students wishing to take a transition minor can submit a request to the Board of Examiners of their own degree program for exemption from the academic training component.
9. The Board of Examiners will take a decision within four weeks after receiving the request for this exemption.
10. A decision not to grant approval will only be taken after the Board of Examiners has given the student the opportunity to be heard and will include reasons for the denial.
11. Students who do their minor (Block B3.1) in the second semester of the academic year can only choose option c in paragraph 2 above for the academic training component or, if applicable, the option referred to in paragraph 6 above.

m3. with respect to the 14 Studium Generale lectures as part of the Academic Training program

1. To students who either start their Block B2.1 or B2.2 in September 2011, the arrangement with respect to the 14 Studium Generale lectures in paragraph 4 of article 3.3 of the current Education and Examination Regulations does not apply. To these students the corresponding arrangement of the previous academic training program still applies:
2. The 14 Studium Generale lectures can be taken during the entire Bachelor's program. The entrance requirement specified in article 3.4, paragraph 1, does not apply to these lectures;
3. Students are required to integrate these lectures in their overall development and to include this in the showcase for the Block in which they attend their last Studium Generale lectures

n. Supplementary conditions for exemptions from assessments

Supplementary guidelines and procedures for submitting and deciding on an exemption request are included in article 2.4 of the Assessment Rules and Procedures 2011 – 2012.

o. Language of instruction and assessments

All curricular learning activities, assessments and final examinations of the Bachelor's program are conducted in English.

Annex 2 Transition Program for External Bachelor Graduates

article 1 - proof of admission to the ID Master's degree program

Students who are admitted to the transition program as referred to in article 4 below and who have completed this transition program successfully with a P-verdict, have a right to receive proof of admission to the Industrial Design Master's degree program.

article 2 - target groups for transition program

1. In agreement with the 3TU guidelines (see flow matrix) students from one of the three universities of technology are admitted to the transition program as referred to in article 4 if they have successfully completed one of the following university Bachelor's degree programs:
 - Architecture
 - Electrical Engineering
 - Aerospace Engineering
 - Marine Technology
 - Technical Innovation Sciences
 - Mechanical Engineering
2. Students from one of the three universities of technology who have successfully completed a Bachelor's degree program different from the ones included in paragraph 1 of this article, can apply for participation in the transition program as referred to in article 4 below.
3. Students who have successfully completed a higher vocational Bachelor's degree program in design or technology can apply for participation in the transition program as referred to in article 4 below.
4. Students as referred to in paragraphs 2 and 3 of this article, who want to participate in the transition program, will be assessed individually by the Departmental Admission Board (FTC). This assessment will result in an individual decision from the FTC whether the student involved can be admitted to the transition program as referred to in article 4 below, whether this transition program needs to be adjusted, whether the student involved needs to participate in a transition program composed specifically for him or her, or whether the student involved is not admissible to the transition program.

article 3 – the language

Considering section 7.2 of the Act it has been determined that, contrary to the basic principle, programs, curricular learning activities, assessments and final examinations will completely be conducted in English.

article 4 – the transition program

1. The student work load of the transition program that students, as referred to in article 2, need to participate in, is 30 credits and includes the following curricular learning activities:
 - a second year project (individual in team) within one of the Themes;
 - three 48-hour assignments;
 - Showcase activities, exhibitions, assessment preparation
 - Self-directed learning activities in dedicated weeks;

- Other curricular activities focused on development, for example (project-related) workshops

For the project as well as the assignments the FTC determines in advance which competency areas the student involved needs to develop.

2. The student completes the transition program with an assessment as referred to in article 1.2.1. of the current Bachelor's Education and Examination Regulations. The outcome of this assessment is either a P-verdict or an H-verdict. If the student gets a P-verdict he is entitled to receive proof of admission to the Industrial Design Master's degree program. If the student gets an H-verdict he is not entitled to receive proof of admission to the Industrial Design Master's degree program and he is excluded from any further participation in the transition program.

article 5 – participation in curricular learning activities of the Master's program

Students who are participating in the transition program as referred to in article 4 of this Annex, are not allowed to participate in curricular learning activities of the Master's degree program on the basis of a study contract. They can only participate in curricular learning activities of the Master's degree program after they have successfully completed the transition program, which means he got a P-verdict for the assessment concerned.

Annex 3 Further requirements for the BSA

There are no further requirements for the BSA

Annex 4 Conditions relating to study contracts

Study contracts

Students who have received a positive study recommendation after their first year of enrolment but who have not obtained 60 credits yet, are required to draw up a study contract together with the study advisor. This applies to students who only received one P-verdict in their first year of enrolment, combined with either a C-verdict or an H-verdict.

The students involved are invited for a meeting by the study advisor to discuss the contents of their study contract. The study contract contains a letter of intention and the student's Personal Development Plan (PDP) for the next semester.

To this meeting with the study advisor students need to bring along a draft version of the letter of intention and of the PDP. They are advised to discuss these draft versions with their competency coach, prior to the meeting with the study advisor.

In the letter of intention students also reflect on the reasons for not succeeding in obtaining their propaedeutic certificate in one year.

In their PDP students need to address explicitly how they are going to fulfil the promotion conditions (in case of a C-verdict), how they are going to meet with the requirements for a P-verdict as set by the assessor concerned (in case of an H-verdict), or how they are going to conclude Block B1.2 successfully (in case their last assessment resulted in a P-verdict). They also include any promotion conditions, requirements or advice from the previous assessor in their PDP.

After the meeting with the study advisor, students make a final version of their letter of intention and their PDP. They include these final versions in their portfolio, discuss them with their coach, and have their coach include a comment to show they have read and agree with the documents.

Annex 5 The STAR Program within the Industrial Design Bachelor's Program

The way in which the Bachelor's program of Industrial Design is set up does not really allow for 'STAR' questions or 'STAR' classes. What we do instead, is pushing our excellent students to perform beyond what our 'regular' students achieve within the various curricular learning activities. This is reflected in the 'Excellence' qualification students can get for their overall development at the end-of-term assessment.

On top of that we stimulate our excellent students to participate in design contests, and to write papers and journal publications (mostly for 2nd year Bachelor's students and occasionally for 1st year students). We select these students for exhibitions, which gives them the opportunity to achieve more depth with respect to detailing, visualising, presenting, graphic designing, prototyping and getting publicity. Demonstrated excellence may also result in financial support of students' design and of presenting their outcomes at exhibitions or conferences.

Finally, our department is an active participant in SDeR, the Student Interaction Design Research Conference, which is organised in a different country every year (by TU/e students in the academic year 2009-2010). This is also an opportunity for excellent students to present their work.

Glossary 1 (general)

Board of Examiners	Committee appointed by the Departmental Board for each degree course (or group of degree courses) for the benefit of administering examinations and for the purpose of the organization and coordination of the assessments (section 7.12, first subsection of the Higher Education and Scientific Research Act);
Certificate	1) A document issued by the Board of Examiners to a student as proof that an examination has been passed (section 7.11 of the Higher Education and Scientific Research Act); 2) A document issued by the examiner(s) in question to a student as proof that an interim examination has been passed (section 7.11 of the Higher Education and Scientific Research Act);
Course component	A part of a degree program followed by an assessment, as defined in Annex 1 to the Education and Examination Regulation of the degree program. Also designated as Block;
Credit	A credit equals 28 hours of study. 60 Credits equal 1680 hours of study (section 7.4 of the Higher Education and Scientific Research Act);
Degree program	A coherent whole of course components, focused on the realization of accurately defined objectives in the area of knowledge, insight and skills which the person who concludes the degree program should possess (section 7.3, second subsection of the Higher Education and Scientific Research Act); This applies to both the Bachelor's and Master's degree courses of the TU/e as included in the Central Register of Higher Education Degree Programs (Croho);
ECTS	Credit in accordance with the European Credit Transfer System. See student workload and credit;
Electives	A list of curricular learning activities (modules) out of which students must choose to fill the flexible part of their degree program;
Examination	An investigation by the Board of Examiners into the question whether a student has completed the assessments of the degree program successfully;
Examiner	A member of staff appointed by the Board of Examiners and charged with the teaching in the course component in question, or an expert from outside the university, for the benefit of conducting assessments (section 7.12, third subsection of the Higher Education and Scientific Research Act);
Free minor	A minor which is composed by the student and which must be approved by the Board of Examiners of the student's own program (see articles 3.2 and 3.6 of these Regulations)
Interim examination	An investigation into the knowledge, insight and skills of a student, as well as the assessment of the results of that investigation (section 7.10, first subsection of the Higher Education and Scientific Research Act);

Minor	A coherent whole of learning activities with a total of 30 credits, which a student may include in his Bachelor's degree program (see chapter 3 of the current Regulations);
Student	A person formally registered as such by the Executive Board for a degree course of the TU/e, in conformity with the Enrolment and Termination of Enrolment Regulations of the TU/e;
Student workload	The student workload of each degree course and each course component is expressed in (whole) credits (section 7.4 of the Higher Education and Scientific Research Act);
Teaching period	The period in which teaching the degree program takes place, as determined by the Executive Board at the start of each academic year;
Working days	Mondays through Fridays, except official holidays recognized by the Dutch government.

Glossary 2 (ID specific)

Assessment Rules and Procedures	Rules and guidelines with respect to a smooth procedure during assessments and with respect to measures to be taken in this respect, as well as the assessment procedures and criteria, the recording of verdicts and other academic results, informing students and archiving portfolio files. The Assessment Rules and Procedures - under art. 7.12 paragraph 4 of the act - are laid down by the Board of Examiners;
Assessment panel	A panel of assessors who jointly decide on the assessment verdict and its justification. The student's coach is a member of this panel;
Assessment weeks	The two final weeks of a semester in which students finalise their showcase; assessors examine students' showcase, have a meeting with their students, and write the draft version of the assessment form; and in which the plenary assessor meetings take place;
Assessor	A member of staff who - under article 7.12 paragraph 3 of the Act - has been appointed by the Board of Examiners to conduct assessments. See Examiner in Glossary 1;
Assessor meeting	A plenary meeting following the assessments, in which all the assessors /assessment panels involved discuss and decide on the final verdict and its justification;
Competency coach	One of the staff roles to facilitate, support and enhance student learning. More in particular, the role of competency coach focuses on the process of individual students' development. Within our framework this is the competency area Self-directed and Continuous Learning, and the overall competence of designing and growth as a designer;
Quartile	A time measure for planning the program, which equals one-fourth of an academic year;
Semester	A time measure for planning the program, which equals half an academic year;

Theme

A theme relates to an area of interest fitting in with the mission statement of the ID Department, without the characteristics of the topic being specified up front;

25: EDUCATION AND EXAMINATION REGULATIONS FOR THE ID MASTER 2011/2012

Document	EER-Master 2011 – 2012, English
For	All ID Master’s students and staff members
Period	Approved for the period 1 September 2011 to 31 August 2012
Author	Diana Vinke, on behalf of the Departmental Board
Type of document	Formal document, for consent by Departmental Council. Adjustments to previous EER are due to ID Edu 1.5. Comments and remarks from ID Education Committee have either been processed where appropriate, or have been addressed in response to their advice by email
E-publication	ID website

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Annex 1 Annex to Article 1.2

Annex 2 Transition Program for External Bachelor Graduates

The Board of the Industrial Design Department of Eindhoven University of Technology, TU/e

in view of sections 9.5, 9.15, subsection 1 under a, section 7.13, subsections 1, 2 and 3, section 9.38, under b, section 9.18, subsection 1 under a, and section 7.8b of the Higher Education and Research Act

in view of the approval of the Departmental Council

having heard the advice of the Education Committee

hereby adopts

the Education and Examination Regulations of the Industrial Design Master's degree program

which reads as follows:

Section 1 - General provisions

article 1.1 – definitions

Where these regulations refer to 'student', 'he', 'him' and 'his', this is also meant to include 'she' and 'her'.

In these regulations, the following terms should be understood to mean:

- a. Act: the Higher Education and Research Act (*Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek, also referred to as WHW*);
- b. Student: a person enrolled in a degree program as a student or external student;
- c. Practical exercise: an educational activity in one of the following forms:
 - writing a thesis,
 - undertaking a project or experimental design,
 - carrying out a design or research assignment,
 - doing a literature study,
 - doing an internship,
 - making a public presentation,
 - taking part in fieldwork or an excursion
 - conducting tests and experiments,
 - writing a position paper,
 - or taking part in other educational activities designed to acquire specific skills
- d. STU: the Education and Student Service Centre (*Onderwijs en Studenten Service Centrum*) of the TU/e;

-
- e. Competency: an individual's ability to acquire, select and use a set of knowledge, skills and attitudes that are required for effective behaviour in a specific professional, societal or learning setting;
 - f. Block: a course component, as referred to in art. 7.3 of the act, which is part of the Industrial Design Master's degree program, has the size of a semester, is composed of a specific set of curricular learning activities and is concluded with an assessment (see Course component in Glossary 1);
 - g. Curricular learning activity: an educational activity which aims at competency development and which a student concludes either individually or in a team. A curricular learning activity may entail the following:
 - o an individual or team learning activity, referred to as 'module',
 - o an individual or team project, referred to as 'project',
 - o an internship
 - o an individual final Master's project, referred to as 'FMP',
 - o self-directed activities during dedicated weeks, which are indicated as such in the year planning. The student determines and defines these self-directed learning activities together with his coach. The student together with his coach are responsible for the quality of these activities;
 - o or any other educational activity aimed at developing one or more particular competencies, which is organised or monitored by the department as part of or addition to the learning activities listed above.
 - h. Assessment: the 'test', as referred to in art. 7.10 of the Act, which is an investigation into the student's development of the overall competence of designing and growth as a designer, including the evaluation of the outcomes of that investigation (see Interim examination in Glossary 1);
 - i. Verdict: the notion of 'study result', the outcomes of the assessor's investigation and evaluation of the student's development of the overall competence of designing and growth as a designer;
 - j. Final feedback: qualitative information in writing on the student's competency development, process, quality of deliverables and attitude, which the student receives at the conclusion of a curricular learning activity and which is input for the student's assessment;
 - k. Showcase: a digital, interactive collection of learning evidence, framed in and enriched with reflections, to communicate and demonstrate development of the overall competence of designing, vision on designing and growth as a designer.

article 1.2 - the program

- 1. In regard to the program, Annex 1 includes:
 - a. the competence framework and composition of Blocks ('the content of the program'), and the corresponding examinations,
 - b. the content of specialisations
 - c. the selection of curricular learning activities by the student ('where necessary, the study components from which the student chooses to complete the optional part of the degree program'),
 - d. the organisation of practical exercises,

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- e. the student workload of the program and of each of its Blocks,
 - f. whether the program is offered as a full time, part time or dual program,
 - g. the number and the sequence of the assessments, and the times at which they can be done,
 - h. the way in which the assessment of students' development takes place ('whether interim examinations are taken orally, in writing, or otherwise'),
 - i. where necessary, that successful completion of assessments is a condition for admission to other assessments,
 - j. where necessary, the obligation to take part in curricular learning activities with a view to participating in a particular assessment,
 - k. the requirements for issuing a proof of admission
 - l. the Bachelor's certificates providing direct admission the program,
 - m. the transitional arrangements as referred to in article 8.3,
 - n. the conditions under which the Board of Examiners may grant an exemption for one or more assessments on the basis of past successful assessment outcomes in higher education or competency development acquired outside higher education,
2. Annex 2 describes the transition program for external Bachelor graduates.
 3. Annex 1 and 2 constitute an integral part of these Regulations.

article 1.3 - qualities

Master of Science Graduates in Industrial Design:

- are scientifically educated, engineering-driven individuals with a full academic master's degree;
- are qualified to degree level within the domain of 'science engineering and technology';
- are competent in the relevant domain-specific discipline(s) to the level of a Master of Science by having achieved the stage of 'Expertise' for their overall competence of designing, which includes integration of the following competency areas: 1) ideas and concepts, 2) integrating technology, 3) user focus and perspective, 4) social cultural awareness, 5) business process design, 6) form and senses, 7) teamwork and communication, 8) design and research processes, 9) self-directed and continuous learning and 10) descriptive and mathematical modelling (see Annex 1.a for a definition of the overall competence of designing and the ten competency areas);
- are capable of acting as independent practitioners within the Industrial Design profession;
- understand the complicated challenges of designing intelligent products, systems and services;
- are able to initiate and execute research and design activities that will lead to the creation of a successful solution;
- have acquired specialised in-depth knowledge, insights and skills within one or more specific competency areas (see Annex 1.a).

article 1.4 - enrolment and admission

1. Without prejudice to what is otherwise stipulated by or pursuant to the Act regarding enrolment for Master's degree programs, enrolment for the TU/e Master's degree program is only open to

those who have direct access to this program based on a Bachelor's degree certificate, as specified in Annex 1 under l, or who possess proof of admission, as specified in Annex 1 under k.

2. Proof of admission is issued by the Departmental Board on the basis of the TU/e admission regulations for Master's degree programs (*Regeling Toelating Masteropleidingen*), as approved by the Executive Board on 8 June 2006.
3. The Board of Examiners can decide that a student who is enrolled in the Industrial Design Bachelor's Degree program at TU/e can be admitted to the corresponding Master's program before he/she has passed the final examination of the Bachelor's degree program concerned.
4. Admission as referred to in paragraph 3 will be granted in any case if the student has earned at least 150 credits for Blocks of the corresponding Bachelor's degree program, which means that he has completed the assessments of Blocks B1.1 up to and including B2.2 successfully (with a P-verdict and/or with an exemption for one or more of these assessments), has obtained the 27 credits for the minor and the three credits for the academic training component of the minor, and has received a C-verdict for the assessment of Block B3.2.
5. Regarding the sequence of assessments in the Master's degree program, students admitted to the Master's program on the basis of the provisions in paragraphs 3 and 4 of this article cannot take part in the assessment of Block M1.1 until they have passed the final examination of the corresponding Bachelor's degree program. Any additional requirements can be included in Annex 1 under i.
6. In order to enable students to move on directly from a Bachelor's degree program to the corresponding Master's degree program, students are given the opportunity to start the Master's program at the beginning of each semester.

article 1.5 – language

1. Considering section 7.2 of the Act it has been determined that, contrary to the basic principle, programs, assessments and final examinations will be conducted in English.

Section 2 - Assessments

article 2.1 - frequency, form and sequence of assessments

1. Annually, the Departmental Board draws up the schedule for assessments which is based on the timetable for written interim examinations issued by the Executive Board, and which is announced at the start of the academic year.
2. Students conclude a Block by doing an assessment. Assessments take place at the end of the semester in which students have been working on the curricular learning activities of the Block concerned.
3. The sequence in which students have to do assessments is indicated in Annex 1g and 1i.
4. For each Block of the degree program the assessment is scheduled twice each academic year (see Annex 1g and 1i).
5. An assessment is conducted by an assessment panel. Assessment panels are allocated to students by or on behalf of the Board of Examiners.

The assessment of students' overall competence of designing and growth as a designer is based on the final exhibition, the showcase, and a meeting between the assessment panel and student. Specifically for block M.2.2. the assessment is based upon the showcase, the exhibition, the FMP report, and a FMP presentation.

6. The assessment panel determines a tentative verdict and justification. They discuss this and decide upon the final verdict at the plenary assessor meeting involved.
7. No more than one student will be assessed at a time, unless the Board of Examiners has decided otherwise.
8. If the competence framework is modified or if the composition of a Block is changed to the extent that this will affect the assessment, students will be given the opportunity to make use of a transitional arrangement with respect to the assessment.
9. In special cases the Board of Examiners can decide to deviate from the set number of times a student can participate in the assessment of a particular Block, as well as from the form in and the time at which the assessment takes place, as indicated in Annex 1 under g through i.

article 2.2 – term of validity and storage times of assessment forms

1. In principle assessment verdicts are valid for an unlimited period of time.
2. If an assessment verdict is older than six years, however, the Board of Examiners may demand that the student take a supplementary or alternative assessment.
3. The Department must keep Assessment Forms for at least two years after the verdict for the assessment has been determined.
4. At all times the student needs to take care of backing up, archiving and storing his own digital files, that is the files he has created himself for curricular learning activities and possible inclusion in his showcase. In addition, the student is advised to make a hard copy of all the formal documents that served as input for his assessments, so final written feedbacks and Assessment Forms. These documents may be needed if the student wants to make use of the possibility to submit an appeal, as referred to in article 6.1 of the Assessment Rules and Procedures 2010- 2011.
5. Students are not allowed to change their showcase in any way for at least six weeks after they have submitted their showcase for an assessment but, in any event, during the objections and

appeal period. For this reason, students are required to hand in a copy of their showcase on a CD or DVD on the date and time they have to submit their showcase.

article 2.3 - participation in and registration for an assessment

1. A student must be enrolled in the Industrial Design Master's degree program in order to participate in an assessment offered by this program, taking into account the sequence of assessments as specified in Annex 1 to the current Regulations under g and i.
2. In order to be admitted to an assessment a student must register for this assessment at STU in the manner specified by STU, within the time limit set by the Department in the Year Planning.
3. In order to be able to take part in the assessment a student must provide identification at the exhibition and the meeting with the assessor or assessment panel, in the form of his student card or a valid proof of identity. If the student is unable to do this, he may not take part in the assessment.
4. Students are obliged to take part in each assessment that is scheduled in the assessment weeks at the end of the semester. They are required to have completed and submitted the assessment deliverables of the Block concerned, on the date and time issued by or on behalf of the Departmental Board.
5. With reference to paragraph 4 of the current article, students are allowed not to take part in the assessment in case of circumstances beyond their control. This non-participation is only allowed with approval from the Study Advisor.
6. A student who has already participated in the assessment of a particular Block twice without successful completion (a P-verdict) must consult the Study Advisor prior to registering for the assessment again. He has to discuss with the study advisor how the problem is to be addressed on the basis of a study plan he has drawn up himself.
7. With reference to paragraph 6 of the current article, a student who has registered for an assessment but fails to submit the assessment deliverables on the required date is considered to have participated in and consequently receives an H-verdict for the assessment concerned. This means that he has to do the same Block - but with a new set of curricular learning activities - again.
8. If a student fails to register for an assessment in conformity with the provisions of paragraph 2 of the current article, he can be excluded from this assessment and consequently receive an H-verdict for the Block concerned. This means that he has to do the same Block - but with a new set of curricular learning activities - again.
9. The Board of Examiners determines whether a student meets with the conditions for admission to an assessment.
10. Where it is considered necessary for organisational or educational reasons, registering for curricular learning activities must occur according to the procedure and within the time limit set by the Director of Education. Students who do not comply with this procedure when registering for a curricular learning activity, or who register after the date specified, are not allowed to participate in the period concerned. The Board of Examiners may make exceptions in such cases.

article 2.4 - withdrawal from an assessment

1. After registering for an assessment, a student is only permitted to withdraw after consultation of and approval by the Study Advisor in the course of the registration period for the assessment concerned. Withdrawal at a later date is allowed only in circumstances beyond the student's control, at the discretion of the Board of Examiners. Withdrawal must take place by notifying STU in the manner specified by STU.

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2. If the student withdraws without approval, he can be excluded from participation in the assessment in the same assessment period. If exclusion applies, the student is considered to have taken part in the assessment and consequently receives an H-verdict for the Block concerned. This means that he has to do the same Block - but with a new set of learning activities - again. The provisions in this article also apply with reference to paragraph 6 of article 2.3.
 3. In exceptional cases, the Board of Examiners may deviate from the provisions in paragraph 2 of the current article
 4. The Board of Examiners can ask the advice of the department's study advisors or of the STU student advisors.

article 2.5 – assessment results

1. Assessments are conducted by an assessment panel.
2. The results of an assessment will be determined for each individual student.
3. The results of an assessment, as well as the investigation mentioned in article 3.1, paragraph 2 of the current Regulations, will be expressed in one of the following verdicts:

P : promotion to the next Block

H : hold

C : conditional promotion to the next Block

If applicable, a student who has received a P-verdict can be awarded with an “excellence” qualification, indicated as “E”.

4. A student has completed an assessment successfully if the verdict is a P. Exemption from an assessment will be considered equal to the assessment verdict P, indicated as: EX. Without prejudice to the provision of the first sentence a student can participate in the next Block if the verdict for the assessment is a C.
5. The procedure for establishing a verdict and assigning credits, as well as the requirements for and consequences of these verdicts, are determined by the Director of Education and are included in the Assessment Rules and Procedures (see Annex 1 to ARP 2011 - 2012).
6. If a student has committed fraud the Board of Examiners may decide on an H-verdict for the assessment concerned. This provision also applies with reference to paragraph 6 of article 2.3.
7. The investigation by the assessment panel into the student’s development of the overall competence of designing and growth as a designer, as well as the justifications of the verdict are included in the assessment form in such a way that the student will be able to ascertain how the verdict has been determined.

article 2.6 – determination and notification of verdicts

1. Before the final verdicts are communicated to the students, they are discussed and determined at plenary assessor meetings, which are scheduled in the assessment weeks.
2. The chair of the plenary assessor meeting provides the department's Educational Office with the final verdicts and any other required information immediately after this meeting.
3. The independent member of the assessment panel finalizes and publishes the Assessment Form as soon as possible after the plenary assessor meeting concerned; the deadline for this is three work days after the plenary assessor meeting.
4. If the independent member of an assessment panel is unable to meet with the requirements in the previous paragraph due to special circumstances, he will announce this to the Board of Examiners,

stating the reasons. The Board of Examiners informs the student(s) involved of the delay immediately, and of the term within which the assessment conclusions and feedback will be made known.

5. Students will be informed of the verdicts by or on behalf of the Board of Examiners in written or electronic form one working day after the plenary assessor meetings have taken place.
6. Verdicts are recorded in the TU/e education information system (OWIS) as well as in the Assessment Form. Students cannot derive any right from the verdict as recorded in the Assessment Form.
7. In case of an assessment taking place in a deviating way, the Board of Examiners determines in advance how and within what period the student will receive a statement on the verdict, assessment conclusions and feedback.
8. Student are notified of their rights of perusal, as referred to in article 2.7 below, the right of evaluation, as referred to in article 2.8 below, and the possibility of submitting an appeal to the Board of Examiners and/or the Examination Appeals Board, as referred to in article 6.1 of the Assessment Rules and Procedures 2011- 2012.

article 2.7 – right of perusal

A student has access to, and thus has the opportunity to peruse the digital copy of his Assessment Form for at least the duration of the semester following the assessment concerned. This enables the student to print out the Assessment Form at any time.

article 2.8 – right of evaluation

1. The student has a right to a verbal clarification of the verdict, the assessment conclusions and feedback by the independent member of the assessment panel. The student himself needs to make an appointment with this assessor, who needs to enable this appointment within 15 working days after the Assessment Form has been published.
2. Without prejudice to the provisions in paragraph 1 above, if the student wants to make use of the possibility to submit an appeal against the verdict, the independent member of the assessment panel concerned needs to give the student the opportunity for an evaluation meeting in good time, enabling the student to submit the appeal within the time span referred to in article 6.1 of the Assessment Rules and Procedures 2011 - 2012, paragraph 2, provision a.

Section 3 - Final examinations

article 3.1 - registration and withdrawal

1. A student must register for a final Master's examination (Block M2.2 assessment) at STU in the manner specified by STU, within the time limit as set by the Department in the Year Planning, which is distributed at the start of the academic year.
2. The Board of Examiners will inform students in good time in what cases and when they plan to conduct an investigation and assessment, as provided in section 7.10, subsection 2 of the Act.
3. The rules governing withdrawal from a final Master's examination are the same as the rules that apply to assessments (see article 2.4 above).

article 3.2 - final examination periods and frequency

There will be at least three opportunities per year to take the final Master's examination (Block M2.2 assessment). The dates of the Board of Examiners' meetings are included in the Year Planning, which is distributed at the start of the academic year.

article 3.3 - assessment of and result for a final examination

1. If a student has taken part in the assessment of a particular Block more than once, the Board of Examiners will take into account the most favourable assessment verdict the student obtained when determining the result of the examination.
2. The result of the examination is either "PASSED" ("*geslaagd*") or "FAILED" ("*afgewezen*"), while retaining assessment outcomes. The result will depend on the assessment outcomes attained, as formally registered five working days before the date of the examination.
3. A student will have passed the examination, if he has completed the assessments that are part of this examination with a P-verdict, taking into account any exemptions that may have been granted to the student, on the basis of article 4.1 or 4.3 of the current Regulations and article 2.4 of the 2011 – 2012 Assessment Rules and Procedures, or, if the investigation and assessment conducted by the Board of Examiners, as specified in paragraph 2 of article 3.1 in the current Regulations, has resulted in a P-verdict.

Section 4 – Approval by the Board of Examiners

article 4.1 – exemption from assessments

1. A written request for an exemption from the assessment of Blocks M1.1 through M2.1 will be submitted to the Board of Examiners no later than two months before the assessment takes place, taking into account the schedule of the Board of Examiners meetings as included in the Year Planning.
2. The request must include all evidence reasonably needed for an assessment of whether the student in question can be granted an exemption (see article 2.6 of the Assessment Rules and Procedures 2011 – 2012).
3. The grounds for which the Board of Examiners can grant an exemption from a particular assessment are exclusively related to the level, the content and the quality of the assessments or examinations the student in question has already completed successfully, or on the student's competency development acquired outside of higher education.
4. A decision not to grant an exemption will only be taken by the Board of Examiners after the student has been given an opportunity to be heard and will include reasons for the denial.
5. The Board of Examiners will decide within four weeks after receiving the request.
6. The decision to grant an exemption from an assessment will correspond to a P-verdict and will be registered as "EX".
7. The conditions for granting an exemption are included in the Assessment Rules and Procedures 2011 - 2012.

article 4.2 – modified composition of Blocks

1. If a student wants a modified composition of a Block, he must submit a substantiated request for approval to the Board of Examiners, at least four weeks before the start of the modified (part of the) Block concerned, taking into account the schedule of the Board of Examiners meetings as included in the Year Planning. This request has to be submitted in writing and has to include justifications for the modification (see article 2.5 of the Assessment Rules and Procedures 2011 – 2012).
2. A decision not to grant approval will only be taken by the Board of Examiners after the student has been given the opportunity to be heard and will include reasons for the denial.
3. The Board of Examiners will decide within four weeks after receiving the request or, if the request was submitted during the academic summer holidays, in the last week of these holidays.
4. The Board of Examiners may deviate from the provisions of paragraph 1.

article 4.3 - going through the program at an accelerated pace

1. If a student wants to go through the program at an accelerated pace by combining two Blocks into one, he must submit a request for approval to the Board of Examiners within seven working days after he has been notified of the verdict for his assessment prior to the semester in which he wants to combine two Blocks. This request has to be submitted in writing and has to include justifications for the composition of the combined Blocks (see article 2.7 of the Assessment Rules and Procedures 2011 – 2012).

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2. A student can only submit a request to go through the program at an accelerated pace if he received an “Excellence” qualification for the assessment in the semester prior to submission of this request.
 3. A decision not to grant approval will only be taken by the Board of Examiners after the student has been given the opportunity to be heard and will include reasons for the denial.
 4. The Board of Examiners will decide within two weeks after receiving the request or, if the request was submitted during an academic holiday, within ten working days after the holiday.

article 4.4 – flexible degree program

1. A substantiated request for permission to take a flexible degree program (see article 2.3 of the Assessment Rules and Procedures 2011 – 2012), as intended in section 7.3c of the Act must be submitted to the Board of Examiners in writing at least four weeks before the start of the program(s) in question, taking into account the schedule of the Board of Examiners meetings as included in the Year Planning.
2. A decision not to grant approval will only be taken by the Board of Examiners after the student has been given an opportunity to be heard and will include reasons for the denial.
3. The Board of Examiners will decide within four weeks after receiving the request.
4. The decision will state the degree program to which the flexible program is deemed to belong.
5. The Board of Examiners may deviate from the provisions of paragraph 1.

Section 5 – Functional impairment

article 5.1 – studying with a functional impairment

1. A written request for an adjustment of curricular learning activities or assessments, or for special facilities to be provided based on a permanent functional impairment, should be submitted by the student in question three months before he is scheduled to take part in the curricular learning activities or assessments. The request should be submitted to STU.
2. The request needs to be accompanied by any documents reasonably required for an assessment of the request. These include at least a recent statement from a physician or psychologist or from a BIG (Individual Health Care Professions), NIP (Dutch Professional Association of Psychologists) or NVO-registered assessment agency (Dutch Association of Educationalists). If possible, this statement provides an estimation of the extent and likely duration of the functional impairment.
3. STU will send facility-related requests to the Departmental Board in so far as the request relates to facilities, together with its recommendations. If the request concerns facilities for the benefit of taking part in an assessment, STU will send it to the Board of Examiners, together with its recommendations.
4. Within four weeks after receiving the request the Departmental Board or the Board of Examiners respectively, will take the decision regarding adaptations or granting facilities. The Departmental Board or Board of Examiners respectively, will ensure that the quality and level of the curricular learning activities and assessments are still safeguarded.
5. Wherever possible, adaptations will be attuned to the specific functional impairment concerned. The facilities to be granted may consist of adjustments to the individual situation of the form or duration of curricular learning activities or assessments, or of practical aids.

Section 6 – Student counselling and study progress

article 6.1 – student counselling

1. The Departmental Board will provide counselling to students on the opportunities for courses of study inside or outside the degree program, including appointing one or more study advisors and appointing a coach to each student.
2. The Study Advisor will advise the student (either at the student's request or on the study advisor's own initiative) on all the aspects of the student's degree program, and will ensure, partly based on the student's study progress and whenever necessary, adequate referral to the competent bodies of the TU/e, to STU student counsellors or TU/e confidential counsellors.
3. Whenever necessary but with the exception of topics that require confidentiality, the Study Advisor will consult and inform the student's coach.

article 6.2 - monitoring study progress

1. The Departmental Board will ensure that assessment results of individual students are registered and are made known in good time in the TU/e education information system.
2. Where appropriate, the Departmental Board will organize a discussion of the results between the student and his/her Study Advisor.
3. If students are faced with study delay, the Study Advisor will inform them of opportunities to receive extra support or of measures that may need to be taken in order to limit the delay as much as possible.

Section 7 - Certificate and qualifications

article 7.1 - certificate and supplement

1. The certificate presentation will take place in public unless, in special cases, the Board of Examiners decides otherwise.
2. The certificate will, in any event, contain the information as specified in section 7.11, subsection 2 of the Act, together with the qualifications specified in article 7.2 (if applicable).
3. At the certificate presentation the student will also receive a supplement.
4. The supplement will contain the information as specified in section 7.11, subsection 3 of the Act, as well as an authorised copy of the student's graduation assessment and, at the student's request, a list of completed curricular learning activities that are not part of the examination, if the student concerned has completed them successfully before the Board of Examiners determines the final examination result.
5. Students who are eligible for a certificate can ask the Board of Examiners to delay the public presentation of their certificate.

article 7.2 - special qualifications for the Master's program

1. A “cum laude” is awarded to the top 5% of our Master’s graduates. The Board of Examiners may decide on the “cum laude” qualification for a Master’s examination
 - if the student has performed an excellent FMP, as apparent from the assessment panel’s written assessment feedback;
 - and if the student has “excellence” qualifications for at least two out of the four assessments that are part of the Master’s examination (Blocks M1.1 through M2.2). Block M2.2 is among these two Blocks that are concluded with an “excellence” qualification for the assessment.
2. The special qualifications specified in paragraph 1 above apply to students who started the first year of the Master’s program on or after September 1st, 2008. For students who enrolled in previous years the special qualifications as referred to in the Assessment Rules and Procedures of the year in which they started the program are applicable. For clarity’s sake these have been included in paragraph m.1 of Annex 1 to the current Regulations.

Section 8 - Final provisions

article 8.1 – objections and appeal

1. Based on the current Regulations, a written objection against a decision of the Departmental Board may be lodged with the Departmental Board within six weeks after this decision has been made known to the person or persons involved. This written objection must be sent to STU.
2. Based on the current Regulations, an administrative appeal against a decision taken by or on behalf of the Board of Examiners may be lodged with the Examinations Appeal Board within six weeks after this decision has been made known to the persons involved. The appeal must be submitted to STU.

article 8.2 – amendments

1. An amendment of the current Regulations will only apply to the current academic year if it can reasonably be assumed not to harm students’ interests.
2. An amendment of these Regulations cannot backdate any decision already taken with respect to a student.

article 8.3 – transitional arrangement

1. If the current Regulations, including the Annex, are amended the Departmental Board will make a transitional arrangement, if necessary. The transitional arrangement will be incorporated in the corresponding Annex.
2. The transitional arrangement will always include the following:
 - a. regulations regarding exemptions that may be obtained based on assessments already successfully completed, and
 - b. the term of validity of the transitional arrangement.

article 8.4 - effective date

These Regulations replace all previous versions and shall become effective on September 1st 2011.

Drawn up by the Departmental Board.

Annex 1 Annex to Article 1.2, First Paragraph of the Education and Examination Regulations for the Industrial Design Master's Degree Program

a. Competence framework, composition of Blocks and final Master's examination

The Department of Industrial Design has the following mission for both the Bachelor's and Master's course:

“Educating unique opportunity creators for societal transformation through intelligent systems.”

In this mission statement systems are defined as “networked technology, products, services and users within a societal context, and the interaction between them”.

The ID program is competency-centred, based on an educational model in which learning and working come together. A competency is defined as “an individual's ability to acquire, select and use the knowledge, skills and attitudes that are required for effective behaviour in a specific professional, social or learning context”. The metaphor for the underlying educational concept is 'the student as a junior employee'. The program does not consist of lecture-based courses that students complete with tests, nor of projects in which students (only) learn to apply previously acquired knowledge. A key notion in competency-centred education is integration: students acquire as well as apply new knowledge, skills and attitudes in an authentic setting. In the Master's students develop their competencies by doing learning activities such as modules, projects, self-directed learning weeks, exhibitions and symposia. The contexts for projects are themes. Current themes, for example, are “Wearable Senses” and “Out of Control”. Most of these projects have a real client, often somebody from industry or one of ID's external coalition partners

The teaching roles that ID staff members have are part of the competency-centred learning environment. Their primary role is facilitator of student learning, from various perspectives such as coaching students on their project or development process, or sharing and making specific expertise available. From these various perspectives staff members give verbal and written feedback on the progression that students show in their competency development and on the quality of their deliverables.

Students document the development of their overall competence of designing and vision on designing in a digital portfolio. In this portfolio they store their work results and feedback from learning activities. Work output also includes project reports, which are written according to academic standards. In addition, students reflect on the quality of their deliverables, their competency development, design process and learning process and attitude across the various learning activities they have done in a semester. Students use all these materials to create their showcase, which is a crucial component of the end-of-term assessment. The focus of the showcase is students' overall growth as a designer, their development of the overall competence of designing, and their vision on designing.

For ID students and staff a competence framework has been defined. The overall competence of designing is shaped by the integration of the students' competency development and profile; the quality of their deliverables; their control over the design process and performance of activities in the reflective transformative design process; and their overall attitude (professional and personal). The ten competency areas enable designing. They either relate to the content of the system to be designed, to the approach needed for the act of designing or to becoming a designer / unique opportunity creator. The ten competency areas are listed and defined below.

1. Ideas and Concepts

Develop visions, innovative ideas and concepts through creativity techniques, experimentations and the translation of research.

2. Integrating Technology

Explore, visualize, create and demonstrate innovative concepts and experiences using technology, as well as analyze the technical and economic feasibility of complex designs in which technology is integrated.

3. User Focus and Perspective

Understand human characteristics, goals and needs, and the context of use; create empathy with users throughout the design process; and design user-system interaction for user experiences.

4. Social Cultural Awareness

Drive the design process from an awareness and understanding of developments in society, envision ones designs in society, put the development of systems in a broader perspective, and take position in and evaluate the impact and mediating role of a system, product or service on society.

5. Business Process Design

Model, analyze and (re)design industrial business processes required for the successful introduction of intelligent systems, products and related services into the market.

6. Form and Senses

Experience and develop – through doing and abstraction - aesthetical (physical) languages that connect thought and (dynamic) form, in order to communicate specific properties of the design concept.

7. Teamwork and Communication

Work together towards a common goal using all strengths within a team and communicate opinions, ideas, information and results clearly and convincingly.

8. Design and Research Processes

Master the design process and the research process, and adjust these processes to the demands of the task at hand.

9. Self-directed and Continuous Learning

Take responsibility for and give direction to personal development, based on a continuous process of self-reflection and out of curiosity for future developments in technology and society.

10. Descriptive and Mathematical Modelling

Be able to create and apply descriptive and mathematical models by using formal and mathematical tools, in order to justify design decisions and support the design of complex, highly dynamic and intelligent systems.

The Master's program is concluded with the Master's examination, consisting of the Blocks (course components) below with the credits and curricular learning activities mentioned.

Year 1	Block M1.1 (DDM11, 30 credits) <ul style="list-style-type: none"> - Design or research project * - 4 module weeks - Self-directed learning activities - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on competency development, such as (project-related) workshops
	Block M1.2 (DDM12, 30 credits) <ul style="list-style-type: none"> - Design or research project * - 4 module weeks - Self-directed learning activities - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on competency development, such as (project-related) workshops
Year 2	Block M2.1 (DDM21, 30 credits) ** <ul style="list-style-type: none"> - Proposal FMP - First stage FMP - Self-directed learning activities - 4 module weeks - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on competency development, such as and (project-related) workshops
	Block M2.2 (DDM22, 30 credits) <ul style="list-style-type: none"> - Final stage FMP - Showcase activities, exhibitions, assessment preparation - Other curricular activities focused on competency development, such as and (project-related) workshops

* Students have to do a design project and a research project in the first year of the Master's. They can either do a design project in M1.1 and a research project in M1.2, or the other way around.

** students have the option to replace the module part of Block M2.1 partly or completely by an internship or exchange. This option has to be submitted as a formal request to the Board of Examiners.

b. Content of the specializations

In the Master's program, specialisation is in terms of career perspective. Students can choose to specialise as a 'designer' or a 'design researcher'. In the first Master's year, students gain experience with both perspectives. One of the M1 blocks is directed towards the 'designer' perspective, the other M1 block to 'design researcher'. In a design project students identify and develop a solution to a design opportunity, acquiring and applying knowledge and skills suitable for the context and goal setting of the project concerned. The design project typically answers a design brief that sets the context for the design opportunity, though part of the design is expanding and redefining the design brief. A design project in itself can make a research contribution when it provides experiential knowledge that is relevant / meaningful and timely to

the research field. In a design research project, students produce knowledge that can guide the design of intelligent systems and products, either in the form of process knowledge or substantive knowledge about different aspects of design artefacts. An ID design research project follows the conventions regarding quality that are appropriate for the discipline perspective of Industrial Design.

In the second year of the Master's students start with their Final Master's Project; in Block M2.1 they work on their FMP and take modules; in Block M2.2 they work on their FMP full time. The modules in Block M2.1 (and M1.2) prepare for that as well.

The modules in Blocks M1.1 through M2.1 are all electives and are related to the overall competence framework of our program (see paragraph a of Annex 1). Students can choose these elective modules both within and outside their specialisation.

c. The selection of curricular learning activities

Each of the four Blocks is composed of a particular set of curricular learning activities in terms of type and number, as mentioned in paragraph a.2 above. Within the boundaries of this set composition, students determine and select their individual set of curricular learning activities that fits in with their envisioned overall development for the semester concerned, as laid down in their personal development Plan. If – given their envisioned development - students need a set of curricular activities that deviates from the default set of activities for the Block concerned, they may submit a request for a modified composition of their Block to the Board of Examiners (see art. 4.2 of the current Regulations).

d. The organisation of practical exercises

The practical exercises as mentioned in paragraph c of article 1.1 are integrated in the curricular learning activities as mentioned in paragraph f of article 1.1.

e. Student workload of the program and of each of its course components (Blocks)

The student workload of the program is 120 credits. The student workload of the Blocks (course components) is indicated in paragraph a. of Annex 1.

f. Form of the program

The program is offered as a full time program.

g. Number and sequence of the assessments

The program has four assessments, one on each of the Blocks mentioned in paragraph a. of Annex 1. They are administered in the order indicated in paragraph i.

h. Format of the assessments

The assessments of the Blocks listed in paragraph a. are conducted as indicated in article 2.1 of these Regulations. A more elaborate description of the various components of the assessment process is to be found in Annex 1 to the Assessment Rules and Procedures 2010 – 2011.

i. Conditions for admission to assessments

Students can only be assessed on the following Blocks if the assessment of the Block specified has been completed successfully, which means with a P-verdict:

Assessment of Block M1.2 after successful completion of Block M1.1;

Assessment of Block M2.1 after successful completion of Block M1.2;

Assessment of Block M2.2 after successful completion of Block M2.1.

j. Obligation to take part in curricular activities with a view to participating in a particular assessment

The focus of the end-of-term assessment is on student's overall development as a designer. The core of the assessment is not about task completion of curricular learning activities but about student's development as achieved in their curricular learning activities, and the way in which this has shaped their overall development as a designer. If students do not conclude a particular learning activity, though, they are expected to justify this in their showcase and to demonstrate that they have achieved their envisioned development in an alternative way.

k. Requirements for issuing proof of admission

The admission requirements for the Master's program are equivalent to the qualities regarding competency development that students acquired at the time of completing their Industrial Design Bachelor's degree program (the preceding Bachelor's program).

Admission foreign students:

1. Command of English: students need to have an IELTS or comparable score of at least 6.5

Comparable scores are:

- TOEFL computer-based: 232
- TOEFL internet-based: 90
- TOEIC: 720
- Cambridge ESOL: CAE-C

2. The level of education in the country in which the student has completed his/her Bachelor's degree program: this must be more or less comparable with Bachelor's degree programs in the Netherlands
3. Level of knowledge and skills: the student must have acquired sufficient knowledge and skills on the basis of the subjects he/she has studied abroad. This knowledge and skills must be at a level comparable with that of Dutch students who are admitted to the Master's program.

l. Bachelor's degree certificates that provide direct access

The following Bachelor's degree certificates from the institutions for higher education indicated below provide direct access to the Master's program:

- "Industrial Design" at Eindhoven University of Technology
- "Industrieel Ontwerpen" at Delft University of Technology, and
- "Industrieel Ontwerpen" at the University of Twente.

m. Transitional arrangements

m.1 with respect to the “cum laude” qualifications

1. The degree qualifications specified in the current Education and Examination Regulations apply to students who started the first year of the Master’s program from September 1st 2008 onwards. For students already enrolled for the Master’s program in previous years , the arrangements in paragraph 2 below apply:
2. The Board of Examiners may award the “cum laude” qualification for the Master’s examination if
 - the student has performed an excellent FMP, as apparent from the assessment panel’s written assessment feedback;
 - and the student has “excellence” qualifications for two out of the four assessments that are part of the Master’s examination (Blocks M1.1 through M2.2) . For Master’s Blocks assessed before September 2008 verbal excellence statements in the assessment form concerned are an equivalent of the formal ‘excellence’ qualification. Block M2.2 needs to be among the two Blocks that are concluded with an “excellence” qualification for the assessment.

Annex 2 Transition Program for External Bachelor Graduates

article 1 – proof of admission to the ID Master's degree program

Students who are admitted to the transition program as referred to in article 4 below and who have completed this transition program successfully (so with a P-verdict), have a right to receive proof of admission to the Industrial Design Master's degree program.

article 2 – target groups for transition program

1. In agreement with the 3TU guidelines (see flow matrix) students from one of the three universities of technology are admitted to the transition program as referred to in article 4 if they have successfully completed one of the following university Bachelor's degree programs:
 - Architecture
 - Electrical Engineering
 - Aerospace Engineering
 - Marine Technology
 - Technical Innovation Sciences
 - Mechanical Engineering
2. Students from one of the three universities of technology who have successfully completed a Bachelor's degree program different from the ones included in paragraph 1 of this article, can apply for participation in the transition program as referred to in article 4 below.
3. Students who have successfully completed a higher vocational Bachelor's degree program in design or technology can apply for participation in the transition program as referred to in article 4 below.
4. Students as referred to in paragraphs 2 and 3 of this article, who want to participate in the transition program, will be assessed individually by the Departmental Admission Board (FTC). This assessment will result in an individual decision from the FTC whether the student involved can be admitted to the transition program as referred to in article 4 below, whether this transition program needs to be adjusted, whether the student involved needs to participate in a transition program composed specifically for him or her, or whether the student involved is not admissible to the transition program.

article 3 - the language

Considering section 7.2 of the Act it has been determined that, contrary to the basic principle, programs, curricular learning activities, assessments and final examinations will completely be conducted in English.

article 4 - the transition program

1. The student work load of the transition program that students, as referred to in article 2, need to participate in, is 30 credits and includes the following curricular learning activities:
 - a second year project (individually in team) within one of the Themes;
 - three 48-hour assignments;
 - Showcase activities, exhibitions, assessment preparation;
 - Self-directed learning activities;
 - Other curricular activities focused on competency development, for example (project-related) workshops

For the project as well as the assignments the FTC determines in advance which competency areas the student involved needs to develop.

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2. The student concludes the transition program with an assessment as referred to in article 1.2.1 of the Bachelor's Education and Examination Regulations 2011-2012. The outcome of this assessment is either a P-verdict or an H-verdict. If the student gets a P-verdict he is entitled to receive proof of admission to the Industrial Design Master's degree program. If the student gets an H-verdict he is not entitled to receive proof of admission to the Industrial Design Master's degree program and he is excluded from any further participation in the transition program.

article 5 - participation in curricular learning activities of the Master's program

Students who are participating in the transition program as referred to in article 4 of this annex, are not allowed to participate in curricular learning activities of the Master's degree program on the basis of a study contract. They can only participate in curricular learning activities of the Master's degree program after they have successfully completed the transition program, which means he got a P-verdict for the assessment concerned.

Glossary 1 (general)

Board of Examiners	Committee appointed by the Departmental Board for each degree course (or group of degree courses) for the benefit of administering examinations and for the purpose of the organization and coordination of the assessments (section 7.12, first subsection of the Higher Education and Scientific Research Act);
Certificate	1) A document issued by the Board of Examiners to a student as proof that an examination has been passed (section 7.11 of the Higher Education and Scientific Research Act); 2) A document issued by the examiner(s) in question to a student as proof that an interim examination has been passed (section 7.11 of the Higher Education and Scientific Research Act);
Course component	A part of a degree program followed by an assessment, as defined in Annex 1 to the Education and Examination Regulation of the degree program. Also designated as Block;
Credit	A credit equals 28 hours of study. 60 Credits equal 1680 hours of study (section 7.4 of the Higher Education and Scientific Research Act);
Degree program	A coherent whole of course components, focused on the realization of accurately defined objectives in the area of knowledge, insight and skills which the person who concludes the degree program should possess (section 7.3, second subsection of the Higher Education and Scientific Research Act); This applies to both the Bachelor's and Master's degree courses of the TU/e as included in the Central Register of Higher Education Degree Programs (Croho);
ECTS	Credit in accordance with the European Credit Transfer System. See student workload and credit;
Electives	A list of curricular learning activities (modules) out of which students must choose to fill the flexible part of their degree program;
Examination	An investigation by the Board of Examiners into the question whether a student has completed the assessments of the degree program successfully (with a P-verdict);
Examiner	A member of staff appointed by the Board of Examiners and charged with the teaching in the course component in question, or an expert from outside the university, for the benefit of conducting assessments (section 7.12, third subsection of the Higher Education and Scientific Research Act);
Interim examination	An investigation into the knowledge, insight and skills of a student, as well as the assessment of the results of that investigation (section 7.10, first subsection of the Higher Education and Scientific Research Act);
Minor	A coherent whole of learning activities with a total of 30 credits, which a student may include in his Bachelor's degree program (see chapter 3 of the Bachelor's Education and Examination Regulations);
Student	A person formally registered as such by the Executive Board for a degree course of the TU/e, in conformity with the Enrolment and Termination of Enrolment Regulations of the TU/e;
Student workload	The student workload of each degree course and each course component is expressed in (whole) credits (section 7.4 of the Higher Education and Scientific Research Act);

Teaching period	The period in which teaching in the course takes place, as determined by the Executive Board at the start of each academic year;
Working days	Mondays through Fridays, except official holidays recognized by the Dutch government.

Glossary 2 (ID specific)

Assessment Rules and Procedures	Rules and guidelines with respect to a smooth procedure of the assessments and with respect to measures to be taken in this respect, as well as the assessment procedures and criteria, the recording of verdicts and other academic results, informing students and archiving portfolio files. The Assessment Rules and Procedures - under art. 7.12 paragraph 4 of the act - are laid down by the Board of Examiners;
Assessment panel	A panel of assessors who jointly decide on the assessment verdict and its justification. The student's coach is a member of this panel;
Assessment weeks	The two final weeks of a semester in which students finalise their showcase; assessors examine students' showcase, have a meeting with their students, and write the draft and final version of the assessment form; and in which the plenary assessor meetings take place;
Assessor	A member of staff who - under article 7.12 paragraph 3 of the Act - has been appointed by the Board of Examiners to conduct assessments. See Examiner in Glossary 1;
Assessor meeting	A plenary meeting following the assessments, in which all the assessors /assessment panels involved discuss and decide on the final verdict and its justification;
Competency coach	One of the staff roles to facilitate, support and enhance student learning. More in particular, the role of competency coach focuses on the process of individual students' competency development. Within our framework this is the competency area Self-directed and Continuous Learning, and the overall competence of designing and growth as a designer;
Quartile	A time measure for planning the program, which equals one-fourth of an academic year;
Semester	A time measure for planning the program, which equals half an academic year;
Theme	A theme relates to an area of interest fitting in with the mission statement of the ID Department, without the characteristics of the topic being specified up front;

26: ASSESSMENT RULES AND PROCEDURES FOR THE ID BACHELOR AND MASTER 2011/2012

Document	Assessment Rules and Procedures ID Bachelor's and Master's Degree Programs 2011 - 2012
Period	Approved for the period 1 September 2011 to 31 August 2012
Type of document	Formal document, for discussion with Board of Examiners. Adjustments due to changes to previous ARP are due to the implementation of ID Edu 1.5.
Author	Diana Vinke on behalf of the Director of Education
Information for	All ID students and staff

Section 1 General provisions
Articles 1.1 – 1.5

Section 2 Additional rules
Articles 2.1 – 2.7

Section 3 Curricular learning activities
Articles 3.1 – 3.4

Section 4 Fraud
Article 4.1

Section 5 Examinations
Articles 5.1 – 5.3

Section 6 Final provisions
Articles 6.1 – 6.5

Annex 1 Assessment process and verdict system 2011 – 2012

Annex 2 Measures in case of fraud

Annex 3 Graduation procedure and requirements

in view of section 7.12, 7.12a, 712.b, 7.12c of the Higher Education and Research Act

hereby adopts:

the Industrial Design Examination Rules and Procedures, which read as follows:

Section 1 – General Provisions

article 1.1 - definitions

Where these regulations refer to 'student', 'he', 'him' and 'his', this is also meant to include 'she' and 'her'.

In these Examination Requirements, the following terms should be understood to mean:

- a. Act: the Higher Education and Research Act (*Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek, WHW*);
- b. EER: the Education and Examination Regulations of the bachelor's and master's degree programs
- c. Student: a person enrolled in the Bachelor's or Master's degree program as a student or external student;
- d. STU: the Education and Student Service Centre of the TU/e
- e. Practical exercise: an educational activity in one of the following forms:
 - writing a thesis,
 - undertaking a project or experimental design
 - carrying out a design or research assignment,
 - doing a literature study,
 - doing an internship,
 - making a public presentation,
 - taking part in fieldwork or an excursion
 - conducting tests and experiments,
 - writing a position paper,
 - or taking part in other educational activities designed to acquire specific skills
- f. Competency: an individual's ability to acquire, select and use a set of knowledge, skills and attitudes that are required for effective behaviour in a specific professional, societal or learning setting;
- g. Block: a course component, as referred to in art. 7.3 of the act, which is part of the Industrial Design Bachelor's and Master's degree program, has the size of a semester, is composed of a specific set of curricular learning activities and is concluded with an assessment;

- h. Curricular learning activity: an educational activity which aims at competency development and which a student concludes either individually or in a team. A curricular learning activity may entail the following:
 - o an assignment (individual activity in the Bachelor's),
 - o a module (individual or team activity in the Master's),
 - o an individual or team project, referred to as 'project',
 - o a minor in the Bachelor's (which includes the option of doing an internship or exchange),
 - o an individual Bachelor's graduation project (Final Bachelor's Project (FBP) or Master's graduation project (FMP, respectively),
 - o self-directed activities during dedicated weeks, which are indicated as such in the year planning. The student determines and defines these self-directed learning activities together with his coach. The student together with his coach are responsible for the quality of these proposed activities
 - o or any other educational activity aimed at developing one or more particular competencies, which is organised or monitored by the department as part of or addition to the learning activities listed above.
- i. Assessment: The 'test', as referred to in art. 7.10 of the Act, which is an investigation into the student's development of the overall competence of designing and growth as a designer, including the evaluation of the outcomes of that investigation;
- j. Showcase: a digital, interactive collection of learning evidence, framed in and enriched with reflections, to communicate and demonstrate development of the overall competence of designing, vision on designing and growth as a designer;
- k. Verdict: the notion of 'study result', the outcomes of the assessor's investigation and evaluation of the student's development of the overall competence of designing and growth as a designer;
- l. Final feedback: qualitative information in writing on the student's competency development, process, quality of deliverables and attitude, which the student receives at the conclusion of a curricular learning activity and which is input for the student's assessment.

article 1.2 – composition of the Board of Examiners

1. The Executive Board installed the Board of Examiners on 1 September 2008. As from October 2011 the Board of Examiners comprises of the following members appointed by the Executive Board on the basis of their expertise in the field of the current Bachelor's and/or Master's program:
 - o as members: prof. dr.ir. J.B.O.S.Martens, dr.ir. R. M. C. Ahn, dr.ir. P. D. Lévy, dr.ir. P. J. M. Sonnemans.
 - o chair: prof. dr.ir. J.B.O.S.Martens
 - o vice-chair: dr.ir. R. M. C. Ahn
 - o official secretary: S.M.H.J Joosten
2. The appointment is for the term of two years. Reappointments are possible.
3. The Board of Examiners consists of the following committees:
 - o Daily Board for day-to-day activities
4. The Study Advisor(s) are advisors of the Board of Examiners for student-related cases. They will be invited for and participate in that particular part of the Board of Examiners meetings.
5. In addition, other experts may be admitted to the Board of Examiners meetings at their own or at the Board of Examiners' request.

article 1.3 – assessors

1. For each assessment the Director of Education submits two lists to the Board of Examiners for approval: a list of potential assessors and a list of potential chairpersons for the assessor meetings. The following requirements apply to assessors:

An assessor

- has taken part in the introductory assessment training;
- has coaching or expert experience with students from the developmental stage as related to the block the student to be assessed is doing;
- has not been the student's coach in the semester to be assessed in case of an assessment of Blocks B1.1 through B3.1;
- has not assessed the student in the preceding semester and/or assessment.

If a potential assessor does not meet with one or more of the requirements above the Board of Examiners may grant dispensation.

2. Assessors will issue the Board of Examiners with the requested information

article 1.4 – the Board of Examiners' working method

- As a rule the Board of Examiners has a meeting once a month. These meetings are planned in such a way that they fit in with the certificate presentation moments and the deadlines related to issuing the binding study advice. The dates of these monthly meetings are included in the Year Planning, which is published at the start of the academic year.
- Prior to taking a decision the Board of Examiners asks relevant parties for advice. The Board discusses the case at hand and carefully examines any relevant advice and/or evidence. In this discussion the Board aims for a decision that is fair, feasible and consistent with related cases. If this discussion does not result in an agreement about the decision to be taken, the issue concerned is voted on by all the members of the Board and the decision is taken by a majority of votes. If there is no majority of votes the chair has a casting vote.
- Decisions are laid down in writing in the minutes.
- Students are informed of the BoE's decision by email as soon as possible after the BoE meeting. In addition, they receive a formal letter stating the BoE's decision within the time frame stated in the articles concerned of the Education and Examination Regulations 2011 – 2012 (Sections 1.4 and 2.2, and article 3.6 for the Bachelor's; Section 4 for the Master's) and in article 6.1 of the current Assessment Rules and Procedures.

article 1.5 – the tasks of the Board of Examiners

The Board of Examiners has the following tasks:

- a) To safeguard the quality of the assessments and final examinations (section 7.12b, under a of the Act; see article 2.1 below).
- b) To establish procedures and instructions within the framework of the Education and Examination Regulations for assessing and determining the results of assessments and final examinations (section 7.12b, under b, of the Act; see articles 2.1 and 2.2 below, and Annex 1 and 3).
- c) To grant permission to take a flexible degree program (section 7.12b, subsection 1, under c, of the Act; see article 2.3 below).

- d) To provide students with opportunities to take one or more elements of the final examination before they have passed a program's propaedeutic examination (section 7.30, subsection 3 of the Act; see article 2.4 below).
- e) To grant permission to modify the composition of a Block (see Education and Examination Regulations 2011 – 2012 and article 2.5 below).
- f) To grant permission to go through the programme at an accelerated pace on the grounds of an 'Excellence' (see Education and Examination regulations and article 2.6 below).
- g) To grant permission to go through the program at an accelerated pace on the grounds of prior education and/or competency development (section 7.12b, subsection 1, under d of the Act; see article 2.7).
- h) To decide on and take measures in case of appeals against the treatment by or decision of an assessor (see article 6.1 below).
- i) To take measures with respect to reported fraud cases (see Education and Examination Regulations 2011 - 2012, and article 4.1 and Annex 2 of the current Assessment Rules and Procedures).
- j) To grant permission to withdraw from an assessment after the assessment registration period (see Education and Examination Regulations 2011 - 2012)
- k) To grant permission to take a free minor (see Bachelor's Education and Examination Regulations 2011 - 2012).
- l) To provide a binding study recommendation (see Education and Examination Regulations 2011 – 2012).
- m) To award certificates (see Education and Examination Regulations 2011 - 2012).
- n) To decide on proposals for a cum laude graduation (see Annex 3 of the current Assessment Rules and Procedures)
- o) To give advice on a foreign candidate's suitability for a PhD track.

Section 2 – Additional guidelines and procedures

article 2.1 – safeguarding the quality and scope of the assessments

1. In order to safeguard the quality and scope of assessments, the following applies:
 - the Director of Education determines the overall assessment procedure and the standards per developmental stage (See article 2.2 below and Annex 1);
 - before determining the assessment procedure and standards the Director of Education discusses them with the Board of Examiners;
 - the Director of Education informs students and staff of the assessment procedure and the standards per developmental stage;
 - assessors conduct the assessments in accordance with the procedure and standards as issued by the Director of Education;
 - chairs of assessor meetings ensure that the procedure and standards used by the assessors when investigating and assessing the student's overall competence of designing and vision on designing, are in agreement with the expected level of the developmental stage and block involved;
 - the Board of Examiners monitors the execution of the assessment procedure and standards.
2. Students as well as staff must follow instructions from the Director of Education that are issued before, during or immediately after the assessment.
3. Assignors, lecturers and coaches upload the required written feedback by means of the appropriate form on the dates and times issued by the Director of Education, with due

observance of the provisions in paragraphs 2 and 3 of article 2.3, paragraph 3 of article 2.4, and paragraphs 3 and 4 of article 2.5.

4. The department provides the assessors involved with adequate and up to date information on students' assessment outcomes up to the assessment involved, before the start of the assessment weeks concerned.
5.
 - a. The assessor determines whether the conditions for admission to the assessment of the block concerned, as referred to in article 3.1, and the requirements for staff input as referred to in article 3.4, have been met.
 - b. If one feedback form, as referred to in paragraphs 3 and 4 of article 3.4 of the current Assessment Rules and Procedures, is missing and the procedure as described in paragraph 5 of article 3.4 has been followed, the assessor or assessment panel will go on with the assessment. The fact that this feedback form is missing must not have an unfavourable effect on the outcomes of the student's assessment.
 - c. If two or more feedback forms on learning activities, as referred to in paragraphs 3 and 4 of article 3.4 of the current Assessment Rules and Procedures, are missing and the procedure as described in paragraph 5 of article 3.4 has been followed, or if the coach feedback form, as referred to in paragraphs 3 and 4 of article 3.4, is missing, the assessor or assessment panel will cease the assessment and will report this case to the Board of Examiners. Since these circumstances are beyond the student's control, the Board of Examiners may deviate from the scheduled assessment dates. Pending the outcomes of such an assessment, the student is admitted to the curricular learning activities of the next block. In addition, the Board of Examiners will take measures to produce the missing feedback forms.

article 2.2 – assessment procedure and verdict system

Every assessment comprises the following components:

1. For an assessment of Blocks B1.1 through B3.1 one assessor is involved; for an assessment of Blocks B3.2, and M1.1 through M2.2 a two-member assessment panel is involved, one of which is the student's coach.
2. For an assessment of Blocks B1.1 through B3.2 and M1.1 through M2.1, the assessor or assessment panel investigates and determines the individual student's development of the overall competence of designing and vision on designing, as communicated through:
 - the student's exhibition of his project at the end of the semester. These end-of-term exhibitions are public, unless IPR (Intellectual Property Rights) apply to student output, in which case special arrangements will be made;
 - his showcase underpinned with evidence of the quality of his deliverables and of his development of the competency areas, which includes the student's deliverables, his reflections and the written feedback;
 - and through his ability to answer questions at a meeting with the assessor or assessment panel.
3. For an assessment of Block M2.2 the assessment panel investigates and determines the individual student's development of the overall competence of designing and vision on designing, as communicated through:
 - the student's exhibition of his project at the end of the semester. These end-of-term exhibitions are public, unless IPR (Intellectual Property Rights) apply to student output, in which case special arrangements will be made;

- the student's showcase, underpinned with evidence of the quality of his deliverables and of his development of the competency areas, which includes the student's deliverables, his reflections and the written feedback;
 - the student's presentation of his FMP and showcase at the assessment session, and the student's ability to answer questions from the panel at the assessment session. With the exception of the question part, graduation assessment sessions are public, unless IPR (Intellectual Property Rights) apply to an FMP or other student output, in which case special arrangements will be made.
4. If necessary, for the blocks B.1. through to B.3.1, the assessor consults the student's competency coach of the block to be assessed.
 5. For each individual student the assessor or assessment panel determines and justifies a preliminary verdict based on the results of this investigation. More detailed information on the verdict system and assessment procedure is included in Annex 1;
 6. At the plenary assessor meeting the assessor or assessment panel determines the final verdict and justifications by verifying and, if necessary, adjusting the preliminary verdict and justifications. In this plenary assessor meeting the (independent) assessor and the student's competency coach participate. If the coach cannot attend this meeting he or she will inform the chair involved and will be available by telephone or any other means to enable contact.

article 2.3 – guidelines relating to the flexible degree program

A flexible degree program is a full Bachelor's or Master's program that is composed by the student himself / herself. The procedure for submitting and deciding on a request to take a flexible degree program is included in article 1.4.4 of the Bachelor's and article 4.4 of the Master's Education and Examination Regulations 2011 – 2012. Before submitting this request, however, the student needs to consult his or her competency coach as well as the study advisor.

In the substantiated request the student needs to include the following information:

- arguments for taking a flexible degree program instead of the program offered by the Department;
- the work load and contents of the course components that are part of the flexible degree program;
- the way in and extent to which the course components of the flexible degree program are expected to contribute to the student's development of the ten ID competency areas (as part of a detailed PDP);
- the way in and extent to which the flexible degree program as a whole is expected to contribute to the student's development of the overall competence of designing and vision on designing, and to offer the student the opportunity to achieve the developmental stage of Depth in case of a Bachelor's program or the stage of Expertise for the Master's program (as part of a detailed PDP);
- feasibility of completing the flexible degree program successfully (timeline and estimated time to be spent per course component).

article 2.4 – providing students opportunities to take one or more elements of the final examination, before they have passed the program's propaedeutic examination

Given the verdict system and the sequence of assessments in the Bachelor's program, students can only be given the opportunity to participate in the first block of the second year (Block B2.1) without having passed the propaedeutic examination in the following situation: if they have received a C-

verdict for B1.2. In this case they are allowed to participate in the curricular learning activities of Block B2.1 and they are admitted to the B2.1 assessment provided that they have met with the conditions imposed by the B1.2 assessor. If they have not met with these C-conditions, their Block B2.1 and B2.1 assessment are considered to be a retry of Block B1.2.

article 2.5 – guidelines relating to modified composition of blocks

1. The procedure for submitting and deciding on a request for a modified composition of a Block is included in article 1.4.2 of the Bachelor's and article 4.2 of the Master's Education and Examination Regulations 2011 – 2012. Before submitting this request, however, the student needs to consult his or her competency coach as well as the study advisor.
2. In the substantiated request the student needs to include the following information:
 - arguments for modifying the default composition of the Block concerned;
 - the way in and extent to which the proposed learning activity or course component is expected to contribute to the student's competency development;
 - the way in and extent to which the modified Block as a whole is expected to contribute to the student's overall competence of designing and vision on designing, and to offer the student the opportunity to achieve the developmental stage of Depth in case of a Bachelor's program or the stage of Expertise for the Master's program;
 - feasibility of completing the proposed learning activities and modified Block as a whole successfully (including timeline and planning for the semester involved);
 - if the request concerns learning activities or course components that are not offered by the department:
 - o the work load, activities and contents of the proposed learning activities of course components
 - o a staff member of ID who will be involved as an expert and who will provide the final written feedback.

article 2.6 – guidelines relating to going through the program at an accelerated pace on the grounds of an 'Excellence'

1. The procedure for submitting and deciding on a request to go through the program at an accelerated pace on the grounds of an 'Excellence' is included in article 1.4.3 of the Bachelor's and article 4.3 of the Master's Education and Examination Regulations 2011 – 2012. In practice this implies a request for the exemption from the assessment of a Block. Submitting such a request is only open to students who received an 'Excellence' qualification for their most recent assessment. Before submitting this request, however, the student needs to consult his or her competency coach as well as the study advisor.
2. In the substantiated request the student needs to include the following information:
 - arguments for going through the program at an accelerated pace;
 - a proposal for the composition of two combined Blocks;
 - the way in and extent to which the proposed curricular learning activities of the two combined Blocks are expected to contribute to the student's competency development;
 - the way in and extent to which the two combined Blocks as a whole are expected to contribute to the student's overall competence of designing and vision on designing, and to offer the student the opportunity to achieve the developmental stage that is expected for the second (i.e. the 'highest') Block.
3. If the Board of Examiners grants the request, the student is allowed to combine two Blocks into one semester and will be assessed on the second ('highest') Block. In his showcase the student

needs to include all evidence and corresponding reflections to demonstrate the stage of development that is expected for the second Block.

4. If the student gets a P- or C-verdict for the second Block he will get an exemption from the assessment of the first Block.
5. If the student does not get a P- or C-verdict for the second Block, he will be assessed at the level of the first Block and will not get the requested exemption.

article 2.7 – guidelines relating to going through the program at an accelerated pace on the grounds of prior education and/or competency development

1. The procedure for submitting and deciding on a request to go through the program at an accelerated pace on the grounds of prior education and/or competency development is included in article 1.4.1 of the Bachelor's and article 4.1 of the Master's Education and Examination Regulations 2011 – 2012. In practice this implies a request for the exemption from one or more assessments. There are two situations in which students can submit this request: (a) the Departmental Admission Board (DAB) has denied the student access to the homologation semester (see Annex 2 of the Education and Examination Regulations 2011 -2012) but has recommended to go through the Bachelor's program at an accelerated pace; (b) the student has enrolled for the Bachelor's and at some point in the program feels that he can go through the program at an accelerated pace based on prior education.
2. In situation (a) the DAB recommends how and from which assessment(s) the student can try and get an exemption. The student submits this as a request to the BoE. The BoE decides on the request, taking the recommendation from the DAB into consideration. As a rule, the BoE follows the recommendations from the DAB. The way in which the student can get the requested exemption(s) is the same as stated in article 2.6 above: by doing an assessment for a particular Block and receiving a P- or C-verdict.
3. In situation (b) the student needs to consult his or her competency coach as well as the study advisor prior to submitting the request for exemption from an assessment. The procedure is the same as described in subsections 2 through 4 of article 2.6 above.

Section 3 – Curricular Learning Activities

article 3.1 - registration for and allocation to curricular learning activities

1. For all curricular learning activities students are going to do they are required to register according to the procedure and within the time limit set by the Director of Education.
2. Students can only register for the number and type of curricular learning activities included in the Block they are doing in the semester to which their registration applies. If, however, students' development requires more or different curricular learning activities, they can be allocated to these activities provided that they have consulted the study advisor about this in advance, the study advisor has given his/her consent and the number of registered participants in the learning activities concerned allows this.
3. Based on their registration, students are allocated to curricular learning activities and to a coach.
4. Students can only change their registration for curricular learning activities according to the procedure and within the time limit set by the Director of Education, and depending on the availability of room for participation in alternative curricular learning activities.

article 3.2 – participation in and exclusion from a curricular learning activity

1. a. Students can only participate in curricular learning activities they have registered for and have been allocated to in conformity with the provisions in article 3.1 above.
b. Students can only do an internship or FMP after formal approval of their internship proposal or FMP proposal, respectively.
2. Students who have registered for and have been allocated to a curricular learning activity have a right to participate in the activity involved, and to receive verbal and written feedback. A student can only be excluded (1) if he fails to fulfil the admission requirements as set in the task description made available before or in the registration period or (2) if he severely disturbs a smooth proceeding of the curricular learning activity. Before taking the decision to exclude a student on ground (2) the staff member involved has to consult and seek approval from the Study Advisor. If the decision to exclude a student is taken, the staff member involved informs the departmental Educational Office on the exclusion.
3. Students who participate in a curricular learning activity for which they have not registered and to which they have not been allocated, may be excluded at once by the staff member involved and do not have a right to any kind of verbal or written feedback.

article 3.3 – withdrawal from a curricular learning activity

1. a. The student is permitted to withdraw from a learning activity he has registered for, provided that he acts according to the procedure and within the time limit set by the Director of Education.
b. Before deciding to withdraw, however, the student should take into consideration that the department is not obliged to offer an alternative curricular learning activity, that participation in an alternative curricular learning activity is only possible to a very limited extent, that this withdrawal may reduce his opportunity to develop his competencies and - consequently - may affect assessment outcomes negatively.
2. The student is considered not to have taken part in a curricular learning activity in the following situations:
 - a. if the withdrawal takes places within the time limit set by the Director of Education;
 - b. if the withdrawal takes places after this time limit and there are circumstances beyond the student's control.

article 3.4 - concluding a curricular learning activity

1. a. Staff members schedule the final meeting of their curricular learning activity and students' final deliverables for the learning activity within the time limit set by the Director of Education.
b. Students exhibit their project - framed in their overall development - at the exhibitions in the IDentity Weeks. These exhibitions are scheduled and organised by the department.
2. Students hand in or present the deliverables required for a curricular learning activity, as described in the task description concerned and within the time limit set by the Director of Education.
3. For every individual student or team that has participated in a curricular learning activity, the staff member concerned provides verbal feedback during the learning activity and written feedback at or after the final meeting, within the time limit set by the Director of Education. The

feedback is given from the perspective of the teaching role that the staff member fulfils in the curricular learning activity: expert in one or more competency areas or coach. The written feedback is provided by means of the required form and includes the following:

- feedback on the quality of the student's work output (deliverables);
 - feedback on the competency development the student has actually achieved, in terms of the ID competence framework;
 - feedback on the student's design process (if applicable) or development process;
 - feedback on the student's attitude.
4. In case of an internship or exchange, the student's coach processes the external organisation coach's written feedback, if available. In case of a project with a(n external) client the student's coach processes the written client feedback, if available.
 5. If a staff member fails to deliver the required written feedback within the time limit set by the Director of Education, the student or team, respectively, should act as follows:
 - contact the staff member involved as soon as possible after the feedback deadline but before the deadline for the showcase and request timely delivery of the missing written feedback;
 - if this is of no avail, contact the department's Educational Office immediately.

Section 4 – Fraud

article 4.1 – regulations regarding fraud

1. Fraud comprises in any case any intentional action by a student, or failure to act by a student, which makes it partially or completely impossible for the assessor to determine the individual student's development of the overall competence of designing and vision on designing.
2. Fraud with respect to a curricular learning activity or assessment includes:
 - Submitting work under ones own name that has been done by others or copied from others wholly or partially: this includes copying word-for-word or paraphrasing the work of others without indicating that the words or underlying ideas belong to someone else;
 - Actively (assisting in) offering or assisting in offering one's own work to others, who might then submit it as their own work;
 - Improper cooperation, that is two or more students jointly doing (part of) a curricular learning activity of which it is known in advance that individual work is required;
 - All manifestations of fraud other than the ones mentioned in the first, second and third paragraph above.
3. If an assessor, assignor, lecturer or coach should discover or suspect fraud in relation to an assessment or a curricular learning activity, either before, during or immediately after the assessment or curricular learning activity, the assessor, assignor lecturer or coach, respectively, will record this in writing as soon as possible and submit this to the Board of Examiners. If requested, the student in question should present any evidence required. Refusal to do so will be mentioned in the report.
4. The student in question will be given the opportunity to add written comments to the report written by the assessor, assignor, lecturer or coach, respectively.
5. The report will be sent to the Board of Examiners as soon as possible, if applicable, together with the student's written comments.

6. It is then up to the Board of Examiners to take any measures it considers appropriate in the case in question. Annex 2 includes the range of measures the Board of Examiners may take.
7. The Board of Examiners may deny the student the right to participate in an assessment during a period set by the Board of Examiners of a maximum of one year.
8. In the event of serious fraud , the Executive Board can, on the basis of a proposal by the Board of Examiners, terminate the student's enrolment in the program indefinitely (see section 7.12b of the Act)
9. Before taking a decision based on the seventh and eighth paragraphs of the current article, the Board of Examiners will give the student an opportunity to explain his/her actions.
10. The Board of Examiners will inform the student of their decision as soon as possible after the meeting.

Section 5 – Examinations

article 5.1 – compensation arrangements for an examination

1. There are no compensation or bonus arrangements for the final examinations of the Industrial Design Bachelor's and Master's degree courses.
2. A compensation or bonus arrangement only applies to course components of a chosen minor in the Bachelor's, if the bonus arrangement has been laid down as part of the minor involved.

article 5.2 – final examination conditions

Given the verdict system and the sequence of the assessments in the Bachelor's, students can only pass the final examination of the Bachelor's if they have successfully completed all assessments that are part of the final Bachelor's examination. Likewise, students can only pass the final examination of the Master's if they have successfully completed all assessments that are part of the final Master's examination.

article 5.3 – graduation procedures

The graduation procedures, as laid down in Annex 3 to the current Rules and Procedures, apply to the final project and assessment of the Bachelor's (Block B3.2) and Master's degree program (Block M2.2).

Section 6 – Final provisions

article 6.1 right to appeal

1. Based on the current Assessment Rules and Procedures, a student or other interested party may lodge an appeal to the Board of Examination Appeals (CBE) against a decision of the Board of Examiners or the assessor, as referred to in article 7.60 of the Act. Such an appeal has to be submitted in writing to STU, within six weeks after publication of the decision concerned.
2. Without prejudice to the provisions in paragraph 1, the student is strongly advised to follow the department's internal procedure in case of an appeal against a decision of the assessor, given the long time span involved in decision taking in case of appeals, and the fact that the Board of Examiners will be involved by the central Board any how. It should be clear, however, that in case of the internal procedure the student can only submit an appeal to the Board of Examination Appeals against decisions of the Board of Examiners, and not against the decision of the assessor (this has been decided on by the Board of Examiners). This means that, in addition to following the procedure described in paragraph 1 above, we advise to do the following:
 - a. Appeals against the treatment by or decision of an assessor can be submitted to the Board of Examiners, within 7 working days after the decision by the assessor or publication of the verdict, respectively. This appeal must also be submitted to STU. The procedure is as follows:
 - the student has a meeting with the assessor concerned, in which the student can ask for clarification of the verdict and/or the justifications of the verdict (this is the evaluation meeting as referred to in article 1.2.8 of the Bachelor's EER and article 2.8 of the Master's EER);

- the student makes an appointment with the Study Advisor to discuss the appeal;
 - the student submits a substantiated appeal in writing to the Board of Examiners, taking into account the maximum time span allowed, as referred to in the first sentence of this paragraph;
 - the Board of Examiners will take a substantiated decision within 10 working days after receiving the appeal together with the assessment form concerned; the student will immediately be informed of the decision.
- b. If the student does not agree with the decision taken by the Board of Examiners he can lodge an appeal against this decision to the Board of Examination Appeals (CBE) within six weeks after being informed of the Board of Examiners' decision, as referred to in paragraph 1. This appeal must be submitted to STU.

article 6.2 - amendments to the Assessment Rules and Procedures

1. An amendment to these Rules and Procedures will not apply to the current academic year unless it can reasonably be assumed not to harm students' interests.
2. An amendment to these Rules and Procedures cannot backdate any decision already taken with respect to a student.

article 6.3 – annual report

Every year the Board of Examiners will compile a report of its activities, which they will submit to the Departmental Board or the Executive Board.

article 6.4 – transitional arrangements

1. If these Rules and Procedures, including the Annexes, are amended, a transitional arrangement will be provided if necessary.
2. The transitional arrangement will always include:
 - a. regulations regarding exemptions that may be obtained based on assessments already successfully completed, and
 - b. the term of validity of the transitional arrangement.

article 6.5 - effective date

These Assessment Rules and Procedures replace all previous versions and come into effect on for the academic year 2011- 2012.

Adopted by the Board of Examiners.

Annex 1 Assessment process and verdict system 2011 – 2012

Document name	Verdict system in a showcase-based assessment
Type of document	Strategy document
Year / students	Bachelor and master students
Date	16 July 2011
Author	Caroline Hummels and Diana Vinke
Version	1.0
Status	Final version
Information for	All students and staff
Implemented on / valid for	September 2011, academic year 2011 - 2012
Publication	ID intranet

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- 2 Focus and scope of the assessment
- 3 The verdicts and their consequences
- 4 Steps of the assessment process
- 5 The five stages for students' overall development
- 6 The showcase

1 Assessment objectives

Assessments are performed from a holistic as well as constructivist perspective on learning. They are not about what students accomplish in separate learning activities, but address the developmental stage which students have achieved in the semester as a whole, as well as their growth as a designer compared to the previous semester. Moreover, it is the student who has to demonstrate this: by constructing a meaningful and coherent 'picture' of his learning and design achievements. The primary goal of the assessment is to facilitate and enhance students' development of the overall competence of designing, their vision on designing, and their growth as a designer.

Formal function of the assessment

The formal function of an assessment is to take a decision on the student's progress in the program. In our case this is "promotion to the next block or not" and "assigning 30 credits or not". This decision is determined by the developmental stage a student has achieved, related to the block he/she has been doing. We assess students' progression towards these stages, and towards final Bachelor's and Master's level, rather than some kind of absolute level that students have or have not achieved. The point of reference for this decision is our model of five developmental stages: Blank – Awareness – Depth – Expertise – Visionary (see Section on 'Five stages for students' overall development' below). Another point of reference is the student's Personal Development (PDP).

Feedback function of the assessment

The assessment provides students with an evaluation of their development of the overall competence of designing, their vision on designing, and their growth as a designer in the semester as a whole, framed in their past development and their envisioned future development. This may confirm, modify or reject what students themselves communicate through and conclude in their showcase. In this respect the assessment is also feedback on the student's ability to self-assess. In addition, the assessment gives feedback on the separate parts that make up the whole, such as students' competency development profile. Last but not least assessment feedback fulfils a feed forward function: it helps students fine-tune or adjust their long-term goals and ambitions for their growth as a designer, and set competency development goals in their PDP for the next semester.

2 Focus and scope of the assessment

The **focus** of the assessment is the integrated whole of students' development: **the overall competence of designing, their vision on designing and their growth as a designer**, as communicated through their showcase and underpinned with evidence. The overall competence of designing consists of both the process of designing and becoming a designer, as well as the resulting design. This competence of designing perspective is visualised in figure 1 below.

Although the assessment focuses on the integrated whole, we would like to stress that the **scope** of the assessment is wider: the assessment also takes into account how this whole is shaped by the various parts, how these separate parts themselves have evolved, how the connections between the parts have evolved, and how they contribute to the whole. It is the connections between the parts, together with the development of all the parts, which shape a student's 'picture' as a whole.

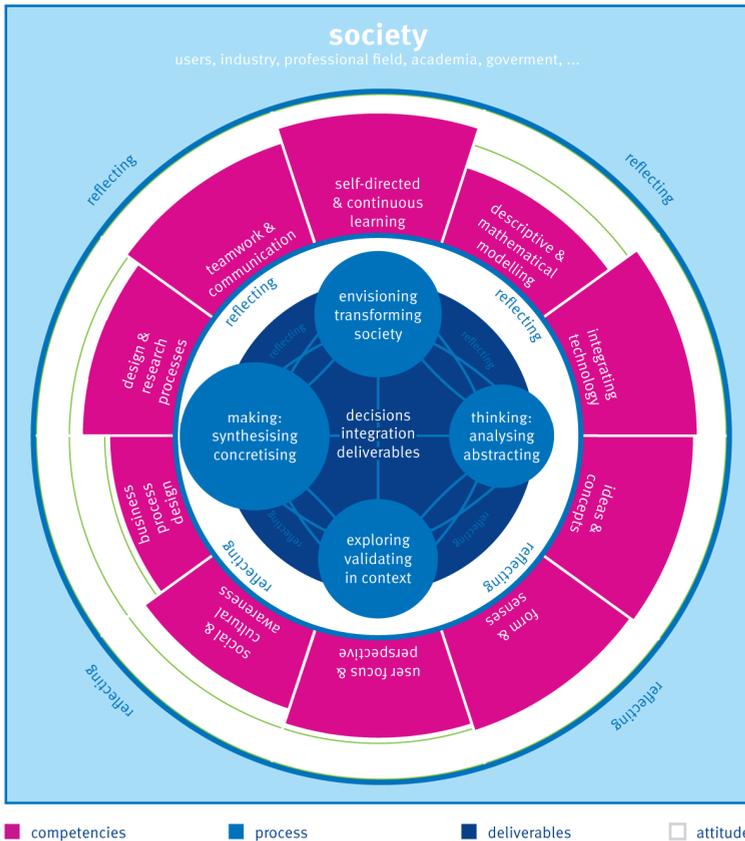


Figure 1 Competence of designing perspective

Students' competence of designing is shaped by the integration of their competency development, their ability to go through and shape their (design) process, the quality of their overall design, and their overall attitude.

1. Students' **competency development** includes their competency profile (the contour of all competency areas together) and their development of the separate competency areas (the total 'surface' per competency area developed). The 'breadth' of a competency area is the sum of all aspects developed during all learning activities. The 'height' grows by developing the same aspect in different contexts; this relates to the complexity students can deal with in a new setting.

Students' competency development also refers to their insight in their own competency development and their understanding of how this contributes to their overall competence of designing (both expressed in their reflections). So the development of competency areas refers to process (of designing and becoming a designer) as well as to content (the elements of a design).

2. Students' ability to go through and shape their (design) **process** is determined by the extent to which they are in control of the activities they perform within the (design) process of various learning activities, as well as their process 'profile': the path and steps a student prefers to take in the (design) process, so which process activities and in what order. Their understanding is, again, expressed in their reflections.

3. The quality of students' overall design refers to the whole of their **deliverables**. This includes the extent to which students' deliverables show students' own 'signature'.

4. Students' overall **attitude** includes their professional as well as personal attitude.

Determinants for students' **vision** on designing are the extent to which students have defined this explicitly in their showcase, express it in their design process and deliverables, and use it to direct their overall development.

Students' **growth as a designer** is reflected by the evolvement of their overall competence of designing and vision on designing over time, so across semesters: how does their current development compare to their past and give direction to their future?

The **showcase** is the students' tool to prove and communicate this integrated whole of their competence of designing and vision on designing. They underpin this with evidence: deliverables from their learning activities, reflections, and written feedbacks. Section 5 of this document includes a brief explanation of and requirements for the showcase.

3 The verdicts and their consequences

Decision on the verdict

On the one hand the assessor determines the developmental stage – or progression towards a particular stage - a student has achieved. On the other hand the assessor evaluates the student's growth: comparing the stage of student's current overall development to the stage the student achieved in the previous semester. So the assessment is partly absolute (which stage achieved) and partly relative (how much growth). The relative part of 'growth' is about the acceleration of the student's progress rather than the speed of the progress: has the student made a jump in his overall development or a small step? This relative part is also about the balance in students' development of the overall competence of designing and their vision on designing. This implies, for example, that students don't have to demonstrate 'equal' development of all ten competency areas at each assessment, but their competency development and profile should be in balance across semesters.

The five developmental stages we distinguish for students' overall development are visualised and described in Section 4 of the current document. That section also contains the overview of expected developmental stage as related to the block a student is doing (Figure 2).

The **decision on the verdict** is determined by the developmental stage a student has achieved or is progressing towards, as related to the block (s)he has been doing, as well as his or her growth compared to the previous semester. A student who has been doing Block B2.1, for example, and who is barely past the stage of awareness, has not made enough progression towards the stage of depth. So the developmental stage achieved – and probably the growth demonstrated - is lagging behind, given the block the student has been doing.

The developmental stage is determined by evaluating the students **integrated 'picture' as a whole**, so the integration of the overall competence of designing and vision on designing. This integrated whole is more than just the sum of the separate parts (competency development and profile, process, overall quality of deliverables, attitude, and vision on designing: see above). It is about how these parts develop, how the student connects them to each other, and how all this is shaped into the student's development of his or her overall competence of designing and vision on designing. In addition, it is also about the way in which the student communicates this in his or her showcase, and underpins it with evidence from learning activities. In terms of the visual representation in figure 1: the student may develop separate parts within the blue spheres or magenta circle, but it is the connections between these parts (reflections) together with the development of all the parts together, which shape the picture as a whole.

Though the assessment focuses on the integrated whole, it is relevant to explicate in the assessment feedback how the separate parts of the whole picture and the connections between them evolve. This

gives students pointers as to how they can develop their overall competence and vision into a particular direction or towards a particular developmental stage, or how they can achieve a 'jump' in their growth.

P-verdict: promotion to the next block

A student gets a P-verdict if the whole of his or her competence of designing and vision on designing demonstrates adequate progression towards a particular developmental stage, given the block (s)he has been doing and compared to the developmental stage (s)he achieved at the previous assessment. This progression is adequate if **the integrated whole** of the student's competency development and profile, process, quality of overall design, attitude, and vision on designing, as well as the connections within and between these parts correspond with the expected (progression towards the) developmental stage involved. A P-verdict means that the student is promoted to the next block and gets 30 credits.

"Excellence" qualification

An "Excellence" is a means to qualify the achievements of students who have received a P-verdict. An "Excellence" is awarded to the top 10% of students who clearly go beyond the developmental stage and growth expected for the block they have been doing. The option that is open to students who receive an "Excellence" qualification is incorporated in article 1.3.3 of the ID Bachelor's Education and Examination Regulations 2009-2010.

C-verdict: conditional promotion to the next block

A student gets a C-verdict if the whole of his or her competence of designing and vision on designing does demonstrate progression towards the expected developmental stage, but either the growth compared to the previous assessment is inadequate or particular parts of his or her overall development are lagging behind. Some competency areas, for example, may be underdeveloped across semesters (the magenta circle is locally too thin); or there may be an unbalance in the student's process activities across semesters (one of the blue spheres is too small); or some of the connections within or between competency development and profile, process, deliverables, attitude and vision are too weak.

A C-verdict means that the student is conditionally promoted to the next block. The assessor sets conditions for the student's future overall development in the next block. The student does not get any credits yet. During the next semester he needs to work on the C-conditions as set by the assessor. C-conditions are related to the developmental stage the student is working towards. They are set in terms of the overall competence of designing and / or vision on designing; and they are – preferably – specified in terms of competency development and profile, aspects related to (design) process, quality of overall design, overall attitude, or connections within and between these parts. If the student meets with the C-conditions at the next assessment, the C-verdict is upgraded to a P-verdict and he gets the 30 credits. If not, the C-verdict will be downgraded to an H-verdict, the student does not get any credits, and the student's current block will be assessed as a retry of the 'H-block'.

For **Blocks B3.2 and M2.2** the assessment panel needs to set a specific procedure and deadline for fulfilment of the C-conditions, and include these in the assessment form. The maximum time-span for B3.2 and M2.2 students to fulfil these C-conditions is two weeks.

H-verdict: hold and retry of the block

A student gets an H-verdict if the whole of his or her competence of designing and vision on designing demonstrates inadequate progression towards the expected developmental stage, given the block (s)he has been doing and compared to the stage achieved at the previous assessment. This progression is inadequate if either the growth of the student's 'process' part lags behind (the whole of the five blue spheres is too small), or the growth of his competency development and profile lags behind (the whole of the magenta circle is too thin), or the connections within and between process, deliverables and competency development are too weak or even non-existent.

An H-verdict means that the student has to demonstrate adequate progression towards the same developmental stage, as related to the same block, again. He does not get any credits. If applicable, the assessor includes guidelines for a tailor-made composition of the retry of this particular block, taking into account the reason(s) for the H-verdict. In terms of ‘progress through the program’ an H-verdict means a delay of half a year.

4 Steps of the assessment process

For Blocks B1.1 through B3.1 one independent assessor is involved. For Blocks B3.2 through M2.2 an assessment panel is involved, consisting of the student’s coach and an independent assessor. In all cases the process of an assessment comprises four steps. Each of these steps provides the assessor/panel with information from a different perspective:

- The first step is the **end-of-term exhibition**. Here students show their project, framed in their overall development. They exhibit visuals about their project, including the process, as well as tangible deliverables. In addition, they ‘pitch’ their project to visiting students and staff members, including their assessor. The assessor has the opportunity to enter in a dialogue with the student and to ask explanatory as well as probing questions. The exhibition provides the assessor with extensive information about the student’s project. In addition, the assessor gets information on the student’s design process, his or her approach and attitude towards designing, and vision on designing. These exhibitions also create a platform for a dialogue between ‘peer-reviewers’. This may contribute to a frame of reference at the departmental level: what do we consider to be an adequate or typical second-year bachelor project, for example, or what illustrates a particular developmental stage best?
- The second step is the **showcase-review**. The assessor goes through the student’s showcase, which gives information on the integrated whole of students’ development of their overall competence of designing, vision on designing and growth as a designer. The showcase also demonstrates students’ competency development and the quality of their deliverables as achieved in separate learning activities, and how these have contributed to the students’ overall development and growth. The central questions to be answered from this showcase review are: (1) what overall picture emerges in terms of the student’s overall competence of designing and vision on designing (observation). If the emerging picture is somehow diffuse, the assessor contacts the student’s competency coach for clarification; (2) which developmental stage does this represent (evaluation); (3) what is the student’s growth compared to the previous semester (observation) and to what extent does this represent an acceleration (evaluation); (4) to what extent has the student achieved (or, in case of excellence, has gone beyond) the expected developmental stage, given the block he/she has been doing (evaluation); and (5) can the student be promoted to the next block or not (tentative decision). The assessor processes the outcomes in an assessment form. The showcase review – and possibly the exhibition – may have raised particular questions or topics, which can be addressed in the third step.
- For blocks B.1.1 through to B3.2 and for blocks M.1.1., M.1.2 and M.2.1 the third step of the assessment process is a **meeting between assessor and student**. This meeting gives the assessor/panel the opportunity to either get clarification or discuss particular aspects or parts of the showcase in more detail. This way the assessor/panel can fine-tune his/her evaluation of the student’s development and growth, and check the tentative verdict. For the student this meeting is an opportunity to demonstrate his overall development and growth in a different way: verbally as opposed to the visual/written communication in the showcase. Based on the exhibition, showcase review and meeting with the student, the assessor decides on the **tentative verdict**.
- For block M2.2. the third step of the assessment is a final master project presentation to the assessment panel. This may also be open to the public. The student an opportunity to demonstrate his overall

development and growth in a different way: verbally as opposed to the visual/written communication in the showcase. The assessment panel and the public may ask questions. The assessment panel evaluates the student's overall development and growth based on the showcase, the deliverables of the final master project, the presentation, and the ability of the student to answer questions regarding the student's work and growth. After the final master presentation, the assessment panel deliberates privately in order to decide on a tentative verdict.

- The fourth and last step of the assessment process is the **plenary assessor meeting**. Here a group of assessors discuss their tentative verdicts and the ground(s) on which they arrived at these verdicts. At this meeting the student's competency coach is among the participants. If applicable, assessors also discuss whether and why students qualify for 'excellence'. This discussion may result in a modification of some of the verdicts and corresponding adjustments of the justification. It is the assessor who, at this meeting, decides on the **final verdict** for the students he/she has assessed, taking into account the preceding discussion. These assessor meetings also serve the purpose of ensuring a common view of the developmental stages for the competence of designing and increasing the validity of the assessments.

5 The five stages for students' overall development

Growth in overall development

Students perform learning activities that yield particular deliverables. In order to achieve these deliverables they need to develop particular competency areas. This competency development also enhances students' performance and understanding of the design process as a whole, and contributes to the development of their overall competence of designing, their vision on designing, and their growth as a designer (the competence of design perspective: see Figure 1 above).

For the growth in students' overall development (competence of designing and vision on designing) we distinguish five developmental stages: Blank, Awareness, Depth, Expertise, and Visionary. Figure 2 below shows which stage students are expected to have achieved at the end of the propedeuse (B1), the Bachelor's (B3) and the Master's (M2). The gradients in this figure show that excellent students may well achieve beyond the expected stage. In the paragraphs per stage (see below) these developmental stages are visualised and described. These descriptions per stage are the frame for determining the verdict: for the decision whether or not a student's overall development and growth as a designer are adequate, given the block (s)he has been doing.

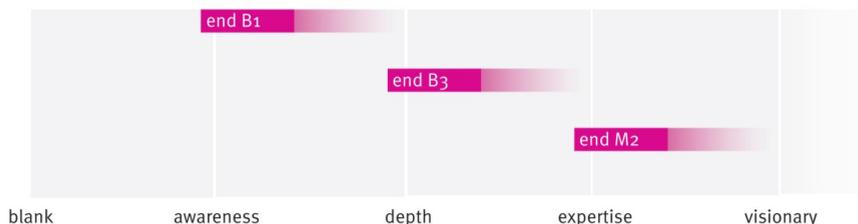
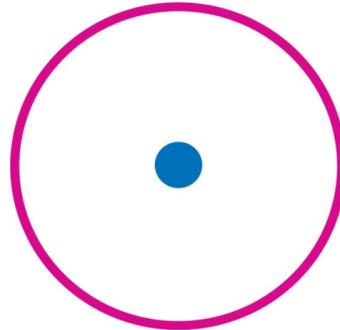


Figure 2 Stages of overall development across the five years

society

Stage 1: blank

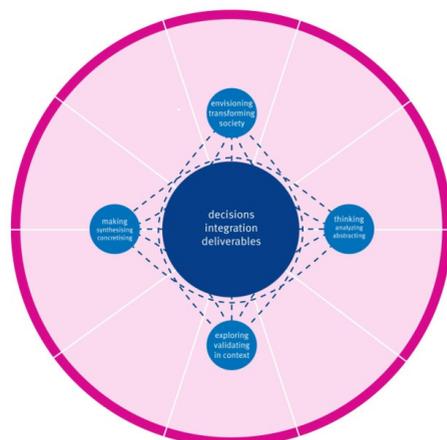
When students enter our department they are like blank, unwritten pages with respect to our view on designing, educational model and ID competence framework. For them the design process is probably just a phrase, a set of unknown activities: one big blur. They do know that our program is competency-centred but the majority of them do not have the slightest idea what the notion of competency means and what the ten ID competency areas entail.



Stage 2: awareness

In the first year, students have performed a number of assignments and projects. They have received their first feedbacks, and have written their first reflections on their learning experiences within learning activities, on their deliverables and competency development achieved. They have built a showcase twice, in which they reflect on their overall competence of designing, on their design process(es) and their growth as a designer. At the end of their first year students demonstrate awareness of what the ten ID competency areas entail as related to their own work, what their overall competence of designing is, what their own growth as a designer is, how their competency development contributes to their overall development, and what a design process may constitute. They have built awareness with respect to interactive systems.

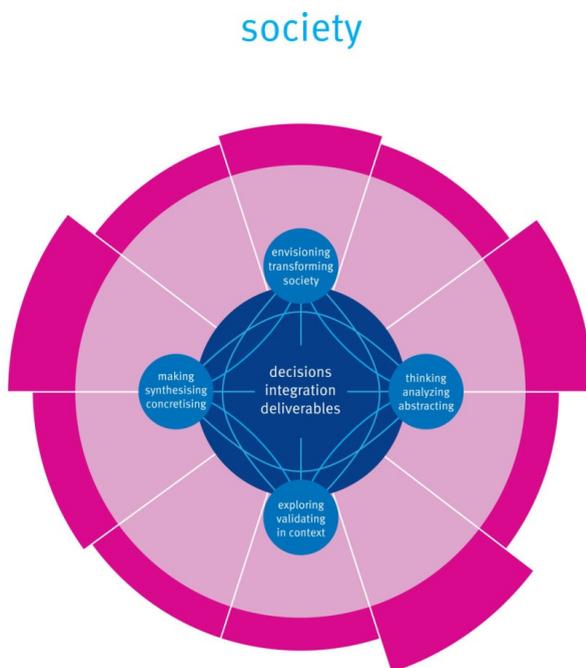
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Stage 3: depth

Depth is the expected stage for Bachelor's graduates. Students have years two and three to achieve this. The stage of depth is characterised by knowledge and skills building, including experiential and theoretical knowledge. Students demonstrate depth in particular competency areas and in their skills as a designer, which clearly shows in the quality of their deliverables: making (synthesising and concretising) and thinking (analysing and abstracting), next to emotional and social skills.

Depth also shows in students' ability to integrate, and their professional attitude and responsibility as a designer. In their reflections they connect competency areas to one another, and establish connections between competency areas, the overall competence of designing, their evolving identity and overall growth as a designer. Students have gained experience with the five activities within the reflective transformative design process, and with jumping from one activity to another while reflecting on each of them. They demonstrate understanding of this design process as a whole. They have built an awareness of intelligent systems and demonstrate depth in interactive systems. Their showcase communicates (the beginning of) a clear vision on designing over time.

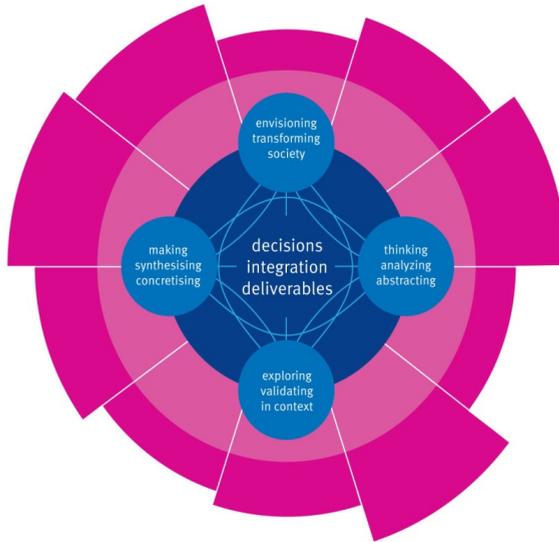


Stage 4: expertise

Expertise is the expected stage for Master's graduates. When students have achieved this stage, the inner and outer circles have merged and are inextricably intertwined in all activities. They demonstrate expertise building in the overall competence of designing, in their growth as a designer and in particular competency areas whereas showing depth in others. Expertise in particular competency areas shows in the quality of students' deliverables and in their ability to discuss and communicate this expertise to others.

Expertise in growth as a designer is reflected in students' showcase and their view on designing in their reflections. This expertise is demonstrated, too, in their integration of interactive and intelligent systems into their design. Expertise in the overall competence of designing is reflected in their ability to integrate various approaches in their design process (design, engineering and social science).

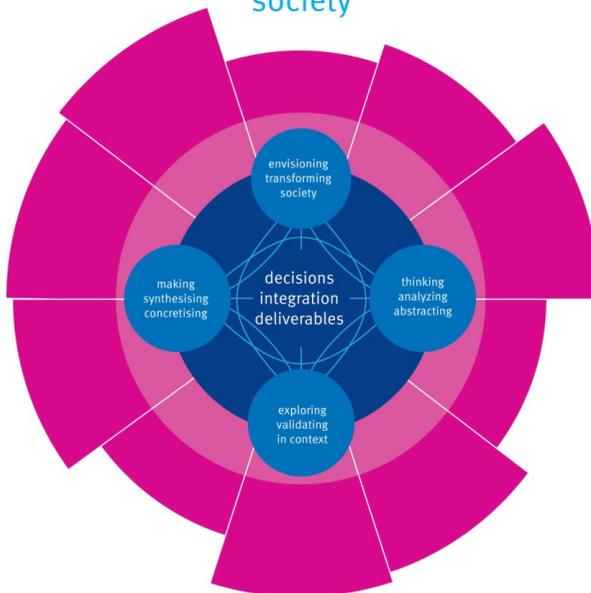
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Expertise also shows in their ability to comfortably jump back and forth between the different activities within the reflective transformative design process, reflecting on the steps they take, and trusting their senses as well as their analytical skills. Their designs, their approach to the design process and their showcase breathe their vision on designing. Master's graduates demonstrate an academic level of designing.

Stage 5: visionary

society



Visionary is the stage that excellent Master's graduates may have started to develop. For many graduates this is the stage they will work on and may arrive at after their graduation. Dorst (2004) defines this stage as follows: "The world discloser or 'visionary' consciously strives to extend the domain in which he/she works. The visionary develops new ways things could be, defines the issues, opens new worlds and creates new domains. To do this a visionary operates more on the margins of a domain, paying attention to other domains as well, and to anomalies and marginal practices that hold promises for a new vision of the domain."

In the Bachelor's as well as the Master's course, a strong emphasis is put on envisioning for societal transformation, and students are stimulated to develop their own vision on society. When a designer has reached the stage of visionary all his/her designs breathe this overall vision, which has become the salient aspect of his/her identity, and this visionary expertise is recognised by other experts in and outside the field of industrial design.

6 The showcase

Developing competencies is a cyclical, highly individual and context-dependent process. It is a dynamic and ongoing process that takes up quite some time. A showcase is an adequate tool to assess students' development of the overall competence of designing. The showcase our students need to create is interactive and integrative: and throughout their showcase written reflections and visuals need to be in balance. This showcase provides a common framework but at the same time it is open enough to allow for individual differences. In addition, it enables the assessment of process (designing and learning) as well as results, so assessment for and of learning. Last but not least, a showcase is also a tool for students to monitor their learning and development. It is their tool to prove and communicate their development of and growth in the overall competence of designing and their identity as a designer.

In the course of a semester students essentially go through iterative learning loops on two levels: a loop of competency development in each learning activity they do, and a loop of growth as a designer over the semester as a whole: their growth in the development of their overall competence of designing and their vision on designing. This corresponds to the two perspectives of the ID competence framework: the learning activity perspective and the competence of designing perspective. In students' showcase these two perspectives are represented as the 'underlying evidence layer' and 'competence of designing or top-layer', respectively, as we will explain in the following sections.

Learning activity: 'underlying evidence layer'

Each learning activity yields deliverables, written feedback from experts (such as assignors, lecturers and coaches) as well as the students' own reflections. In these reflections they look back on what they have achieved for each learning activity (reflection on action) and how this will direct and shape their future development and activities (reflection for action). This is indicated in the ID competence framework by the blue circle around the learning activity. In their reflections students address the four elements that comprise the overall competence of designing, as explained in chapters four and five: their competency profile and development, their process, the overall quality of their deliverables and their overall attitude **as achieved within the learning activity concerned**. In their reflections they also address the written feedback they have received.

For the 'underlying evidence layer' of their showcase they select the most relevant deliverables, feedback and reflections, that is, the ones that show the essence of their development and learning process in each learning activity. They also write a more condensed and integrative reflection about the learning activity as a whole, if necessary. In addition, they decide which deliverables they include in full, as downloadable parts of their evidence (a project report, for example), and which deliverables they include as visual

evidence only. Clarifications of their process can be conveyed by visuals and/or reflections. As a whole, this 'underlying layer' provides evidence for students' competency development and profile, their (design) processes, their deliverables and attitude (personal and professional).

The word 'layer' should not be taken too literally: what is meant is a conceptual layer. The interactive showcase does not necessarily need to contain a visible hierarchy and structure in which the evidence of learning activities is placed as a 'physical' sub-layer one can link to. The actual representation can be done in many ways, for example showing learning activities in time with small linkable circles, or showing all these aspects as links in one 'chapter', arranged by the specific learning activity.

Competence of designing / growth as a designer: 'top layer'

Students review all the deliverables, feedbacks and reflections from their learning activities to determine how these have contributed to and shaped the development of their overall competence of designing and their vision on designing. This review should result in a coherent and overall picture, the 'top layer' of the showcase; again a metaphorical expression and not per definition a real 'physical' layer in the showcase. This 'top layer' is composed of the 'patterns' in their competency development and profile, the quality of their deliverables, their (design) processes and overall attitude, as achieved across learning activities. It is a careful selection from their deliverables, complemented with integrative reflections on their development of and growth in their overall competence of designing and their vision on designing. Students can and should also include additional visuals, so visuals that are not part of their 'underlying evidence layer'.

This overall picture needs to be underpinned with evidence and information in the 'underlying layer' from their learning activities: deliverables, written feedbacks, process and reflections. This means that students connect the 'underlying evidence layer' to the 'top layer', physically as well as content-wise (connected evidence should corroborate particular aspects of the top layer). They need to integrate the different parts into a whole. The 'top layer', too, is interactive and integrative, with a balance between written reflections and visuals.

Students' showcase needs to communicate their evolvement of 'their' picture as a whole: from past through present towards future. Students demonstrate 'evolvement' by framing their current growth and overall development (present) in the five-stage model from blank to visionary, and by fitting this in with their history as a designer up to that point (past) and their view of the designer they want to become (long-term goals for the future as well as short-term goals for the next semester). They are also required to demonstrate their growth and development as an integrated whole. This implies that they reflect on and visualise relationships, for example between learning activities, and how these relate to the development of their overall 'picture'. In their showcase they need to communicate how their overall competence of designing and vision on designing are shaped by their competency profile and development, the control over and path of their design process, the overall quality of their deliverables and their overall attitude.

Annex 2 Measures in case of fraud

What is the range of measures in case of fraud?

In the past years the Board of Examiners has discussed and decided on several cases of fraud. Based on this experience, the Board of Examiners has established a range of punitive measures. The measures at the severe end of this range (4 through 6) have been determined at the central TU/e level. The measures at the 'lighter' end of the range have been developed through the years, by the Board of Examiners. The punitive measures below are listed from light to severe:

- 1) The student receives a warning. This measure only applies to cases of unintentional acts of fraud;
- 2) The student needs to complete an extra learning activity on ethics **
- 3) The student does not receive written final feedback for the curricular learning activity involved
- 4) The student receives an H-verdict (see par. 7 of article 1.2.6 of the Bachelor's EER 2010 - 2011 and par. 6 of article 2.6 of the Master's EER 2010 – 2011)
- 5) The student is denied the right to participate in an assessment during a period set by the Board of Examiners of a maximum of one year (see par. 7 of article 4.1 of the current ARP)
- 6) In the event of serious and/or recurring fraud the Board of Examiners can submit a proposal to the Executive Board to terminate the student's enrolment in the program indefinitely (see section 7.12b of the Act, and par. 8 of article 4.1 of the current ARP)

In case a student is caught on committing fraud, the student will have to continue his/her study until the Board of Examiners has decided on the measure regarding the fraud.

In case a student commits fraud a second time, the measure will be more severe. This will automatically mean one or more steps higher in the range of measures, depending on the gravity of the fraud. The severest punishment is to be removed from the department permanently.

** Learning activity on ethics

1. Read a book or papers on the subject of ethics, referencing and / or fraud. You are allowed to choose literature that is relevant to your situation.
2. Write a report of a maximum of 5 pages discussing questions such as:
 - o What is fraud?
 - o How do you recognize fraud?
 - o How can you prevent fraud?
 - o What are the consequences in the professional field?
 - o How do you deal with sources?
 - o What are the consequences for you as a designer?

In this report you need to make clear which sources you used to write the paper. Also, you need to make correct use of references.

3. Discuss this report with your coach, and send it to your assessor. If the assessor wants to (s)he can ask you for additional information during your meeting.
4. You do NOT need to reflect on your experience with fraud in your showcase.

Annex 3 Graduation procedure and requirements

Graduation deliverables (B3.2 and M2.2)

B3.2 and M2.2 students have to submit their showcase and final FBP / FMP report to their assessment panel at the scheduled deadlines (see Semester Tracks and Year Planning).

In addition, B3.2 and M2.2 students have to hand in a DVD at the Secretariat of Educational Affairs. The DVD needs to be labelled with the student's name, date assessment session, block, and student ID- and S-number. This DVD is for the Department and has to include:

- Students' B3.2 / M2.2 showcase, including all evidence files
- The digital version of their final FBP / FMP report (pdf)
- A summary of their final FBP / FMP report for the graduation report database, with a maximum of 500 word
- 2 to 5 representative digital images with title and a movie clip showing a working prototype. These images and/or movie clip are intended for publication by the department

The final report should provide a good insight into the project in terms of goal, methods and results, and it must be academic in terms of contents, structure and language.

The digital copy of the final report included on the DVD will be archived in the Central TU/e Library. As such, these reports will be retrievable for an internal as well as external audience. In case of an NDA, two versions need to be provided: a complete version that will only be made public as agreed with the client organisation, and an embargo-version that will be placed in the library in the mean time.

Graduation process (B3.2 and M2.2)

The assessment of B3.2 and M2.2 students takes place according to the overall procedure and verdict system as described in article 2.2 and Annex 1 of the current Assessment Rules and Procedures. In either case students are assessed by a two-member assessment panel.

For Master's students the approval of their FMP brief after the first half of Block M2.1 and the evaluation of their progress with respect to the FMP at the end of Block M2.1 are additional steps in the graduation procedure. These steps are two official GO / NO GO moments at which continuation with the FMP is decided on.

During four weeks in the first half of their M2.1 semester, students explore and determine the boundaries of their FMP, which includes the project description and the first quick iteration to give an indication of the design space. This is done both synthesizing-wise and analyzing-wise (e.g. explore the real context, create and build their first ideas, read literature and write the project description). They present their outcomes and process at the mid-term exhibition.

During four weeks in the second half of their M2.1 semester, students run the second and – if preferred – the third iteration of their project. This results in the theoretical framing, the first experiential prototypes, descriptive models and user tests. They present their outcomes and process at the end-of-term exhibition.

During their M2.2 semester, students work on their project full-time. They go through several iterations, which result in their final design and other deliverables. They present their work and process at the mid-term and end-of-term exhibition, and in a final presentation at the end of term.

Approval of the FMP brief halfway the M2.1 semester

The scheduled moments for this approval meeting are included in the Semester Track and Year Planning. This decision is taken by a two-member approval committee, consisting of the student's coach and a professor, associate professor or assistant professor of a capacity group and/or Theme that is different from the coach's. Students' input consists of a project description and a presentation. As a rule, two decisions are possible:

- A GO means that the FMP brief, including an exploration of the design and solution space, is approved and that the student can go on with the FMP.

- A NO GO means that the FMP brief is rejected and that the student has to make a new FMP brief based on an off-the-shelf project. This implies that creating a new FMP brief comes on top of the regular FMP work that applies to the second half of the semester.

In exceptional cases the approval committee may also decide on a 'GO but': overall the student's project brief is adequate but the student needs to make minor adjustments in the second half of the semester, before continuing with the FMP.

Progress evaluation at the end of the M2.1 semester

As part of the M2.1 assessment the assessment panel decides if the FMP shows enough progress and focus, and if the remaining part of the FMP is feasible within one semester (Block M2.2).

The student will receive a P-verdict (or C-verdict) if this is the case, and an H-verdict if either progress with or focus of the FMP is inadequate. An H-verdict will also be given if the student's overall development is not on track. An H-verdict implies that the student has to do a retry of Block M2.1 and start a new, off-the-shelf FMP.

Possible outcomes of a graduation assessment (B3.2 and M2.2)

For a B3.2 or an M2.2 assessment the outcome may be:

- P-verdict (possibly with an 'Excellence' qualification')
- H-verdict (which we try to reduce for M2.2 students with the two GO / NO GO moments in Block M2.1)
- C-verdict, which means that the student can get a maximum extension of two weeks (so only a condition for minor issues can be imposed)

If the student needs to do a retry of Block B3.2 or Block M2.2, this means doing a new, off-the-shelf project with special emphasis on those aspects that need further development.

Graduation cum laude (B3.2 and M2.2)

A “Cum Laude” is a means to qualify the Master’s graduation of excellent students. A “Cum Laude” is awarded to the top 5% of our graduates.

Minimum requirements for a Bachelor’s cum laude proposal are:

- Three “Excellence” qualifications *: one for B3.2 **and** two for other Bachelor’s Blocks (B1.1 – B3.1)**, **and**
- Excellent performance of FBP (or in case the student was allowed to switch the composition of Block B3.1 and B3.2: excellence performance of the student’s chosen minor) and B3.2 showcase, as apparent from the assessment panel’s written assessment feedback.

** For students who already enrolled for the Bachelor’s program before academic year 2010 - 2011 this entrance requirement is: two Excellence qualifications, one for B3.2 **and** another one for the assessment of Blocks B2.1 through B3.1.*

Minimum requirements for a Master’s cum laude proposal are:

- Two “Excellence” qualifications: one for M2.2 and one for another Master’s Block (M1.1 – M2.1)**, **and**
- Excellent performance of FMP and M2.2 showcase, as apparent from the assessment panel’s written assessment feedback

*** We introduced the “Excellence” in September 2008. So for any relevant assessments before that time the assessment panel should determine whether the student’s assessment feedback contains qualifications that are equivalent to an “Excellence”. For the Bachelor’s: also see transition arrangement in subsection m. of Annex 1 to the Bachelor’s Education and Examination Regulations 2011 – 2012.*

Procedure for Bachelor’s and Master’s:

- The first step for the student’s assessment panel is to propose their cum laude case at the plenary assessor meetings, providing clear, concrete arguments and evidence for the student’s overall excellence throughout the Bachelor’s or Master’s, respectively (they need to have gone through the student’s previous assessments before this plenary meeting).

If there is enough support for the case at the plenary meeting:

- the chair writes this on the Verdict Form;
- the assessment panel involved submits a formal request to Board of Examiners. This request includes any formal ‘Excellence’ qualifications the student has received for relevant assessments, together with clear, concrete and convincing argumentation and evidence of the student’s excellence in terms of the competence framework. The evidence may include extracurricular achievements, external feedback or acknowledgements, relevance for industry or the discipline, quotations from previous assessment forms or feedback forms. The panel also includes the student’s B3.2 / M2.2 assessment form. If any information is not included, the BoE cannot take a grounded decision and the case will be dismissed;
- the BoE will decide whether or not to award the cum laude qualification.

Deadline for submitting the substantiated cum laude proposal is one week before the BoE meeting involved (see Year Planning).

Glossary

Glossary 1 (general)

Board of Examiners	Committee appointed by the Departmental Board for each degree course (or group of degree courses) for the benefit of administering examinations and for the purpose of the organization and coordination of the assessments (section 7.12, first subsection of the Higher Education and Scientific Research Act);
Certificate	1) A document issued by the Board of Examiners to a student as proof that an examination has been passed (section 7.11 of the Higher Education and Scientific Research Act); 2) A document issued by the examiner(s) in question to a student as proof that an interim examination has been passed (section 7.11 of the Higher Education and Scientific Research Act);
Course	A coherent whole of course components, focused on the realization of accurately defined objectives in the area of knowledge, insight and skills which the person who concludes the course should possess (section 7.3, second subsection of the Higher Education and Scientific Research Act). Also referred to as Degree course; This applies to both the Bachelor's and Master's degree courses of the TU/e as included in the Central Register of Higher Education Degree Programs (Croho);
Course component	A part of a degree course followed by an assessment, as defined in Annex A to the Education and Examination Regulations of the degree course. In the Industrial Design Course also designated as 'Block';
Credit	A credit equals 28 hours of study. 60 Credits equal 1680 hours of study (section 7.4 of the Higher Education and Scientific Research Act);
ECTS	Credit in accordance with the European Credit Transfer System. See student workload and credit;
Electives	A list of curricular learning activities (modules) out of which students must choose to fill the flexible part of their degree program;
Examination	An investigation by the Board of Examiners into the question whether a student has completed the assessments of the course successfully;
Examiner	A member of staff appointed by the Board of Examiners and charged with the teaching in the course component in question, or an expert from outside the university, for the benefit of conducting assessments (section 7.12, third subsection of the Higher Education and Scientific Research Act);
Interim examination	An investigation into the knowledge, insight and skills of a student, as well as the assessment of the results of that investigation (section 7.10, first subsection of the Higher Education and Scientific Research Act);
Minor	A coherent set of course components which equals 30 credits in total which the student can include as part of his Bachelor's program and which complies with the conditions as mentioned in the letter from the Executive Board dated 29 April 2005, reference number CvB 2005/1007 (article 3.4 of the Education and Examination Regulations of the Bachelor's degree course)
Student	A person formally registered as such by the Executive Board for a degree course of the TU/e, in conformity with the Enrolment and Termination of Enrolment Regulations of the TU/e;
Student workload	The student workload of each degree course and each course component is expressed in (whole) credits (section 7.4 of the Higher Education and Scientific Research Act);
Subject course	See 'course component'
Teaching period	The period in which teaching in the course takes place, as determined by the Executive Board at the start of each academic year;
Working days	Mondays through Fridays, except official holidays recognized by the Dutch government.

Glossary 2 (ID specific)

Assessment panel	A panel of assessors who jointly decide on the assessment verdict and its justification. The student's coach - as chair - is also a member of this panel;
Assessor	A member of staff who - under article 7.12 paragraph 3 of the Act - has been appointed by the Board of Examiners to conduct assessments. See Examiner in Glossary 1;
Assessor meeting	A plenary meeting following the assessments or assessment seminars conducted by individual assessors or assessment panels, respectively, in which all the assessors or assessment panels involved discuss and decide on the final verdict and its justification;
Competency coach	One of the staff roles to facilitate, support and enhance student learning. More in particular, the role of competency coach focuses on the process of individual students' competency development. Within our framework this is the competency area Self-directed and Continuous Learning, and the overall competence of designing and identity as a designer;
Quartile	A time measure for planning the program, which equals one-fourth of an academic year;
Semester	A time measure for planning the program, which equals half an academic year;
Theme	A theme relates to an area of interest fitting in with the mission statement of the ID Department, without the characteristics of the topic being specified up front;

27: BOE TASK FORCE ON ASSESSMENT QUALITY AND MONITORING

Address from the Board of Examiners to the Task Force Based on the current modification planned at TU/e and at its department of Industrial Design, the Board of Examiners of Industrial Design (BoE) has undertaken an active reflection upon the improvement of the assessment process and of its monitoring. The objective is to bring forward the quality of the assessment and to provide the BoE with relevant means to ensure the quality of the assessment.

The BoE intends to create a Task Force (TF) to carry on this reflection towards the presentation of concrete recommendations to achieve the aforementioned objective.

Therefore, the BoE addresses the following questions to the task force:

On the assessment process:

70. How is the assessment actually experienced by all stakeholders (students, assessors, coaches, administration)?
71. How clear for stakeholders are the philosophy, the procedures, and the (legal) regulations?
72. Are all required means satisfactorily accessible to perform the assessment smoothly?
73. If beneficial, how can means be improved to enhance the assessment process?
74. On the assessment monitoring:
75. Which aspects should be monitored to ensure the quality of the assessment?
76. What means are required to monitor satisfactorily the assessment?
77. How can BoE act upon a notice of a lower quality assessment?

Task Force members The members of the TF were selected and invited in order to create a group with multiple viewpoints. The TF members were:

- Sonja M.H.J. Joosten, secretary of the BoE
- Geert R. Langereis, full time assistant professor/coach
- Pierre D. Lévy, chair of the TF and member of the BoE/coach
- Sander S. Mulder, part time lecturer/coach
- Anne F. Spaa, student

- Task Force sessions** The TF met five times to interview and to reflect together with members of ID education and with members of the Bachelor College (BC). The sessions were programmed as follow:
- a. December 6th 2011: The educational model (interviewee: Diana A.A. Vinke)
 - b. December 13th 2011: Practicalities (interviewees: Pleunie W.M.A. van Daesdonk and Yolanda L. Hübner)
 - c. February 14th 2011: Technicalities (postponed to March 20th 2012)
 - d. February 21st 2012: Bachelor College (interviewees: Diana A.A. Vinke and Gerard A. van Watering)
 - e. March 20th 2012: Technicalities (interviewee: Lenny C.A. Apon)

Each session lasted for approximately two hours. They took place at HG2.30. The first discussion was based on questions addressed to the interviewee. Then the answers became progressively a discussion between the participants. Participants were asked to write down on little cards the main topics and the main issues extracted from the discussions. At the end, all the participants mapped the cards and clustered them in main topics. These topics form the skeleton of this report.

Moreover, the members of the TF had access to:

01. The annual report of the BoE 2010/2011,
02. The assessment result graphs 2001/2012.

Task Force output During the interviews and the discussions, many points have been expressed either by the task force or by the interviewee. This part list the points related to the questions addressed by the BoE. There are two types of points: advise (for which the TF already propose a direction for solution) and concern (which are presented in the form of questions, and for which the TF insists on its awareness regarding the issue without necessarily proposing a direction of solution).

Equality, reliability and quality of assessment

The necessity of having a fair assessment is stressed out on different points:

12. It seems that students express the worry that the result of the assessment depends on one assessor. The coaches agree that although the reasons for a decision might differ depending on the point-of-view of the assessor, there is a consensus in most of the cases concerning the verdict. However, this raises the question to what extend the assessment leads to verdicts in a reliable and valid way.
13. Promotion is absolute; Excellence is relative. How to deal with a certain percentage of Excellences when they are decided in different plenary meetings occurring at the same time? Or at least, is it possible to monitor the level of equity between students?
14. How much should the coach be involved in the assessment process? What is her/his role in the assessment?

15. The Binding Study Advise (BSA) influences the B11 block verdicts. The B11 assessors should be clearly inform about the way to handle the assessment. Moreover, the influence of the BSA on the verdicts and the appeals should be monitored.
16. In the context of the BC, ID will have to address the case of redoing a course (most likely in case of exam failure), as redoing an assignment is not part of the ID system.
17. The assessment verdicts need to be monitored and logged over the years, in order to detect evolutions and to react as soon as possible to non-desired evolutions.
18. Students worry about the possible effect of the assessor's experience (as an assessor), specialty, and theme. This topic is related to the "coach and assessor development" topic.
19. H in B22: shall we really prevent a student to go for a planed and valuable internship?
20. Can a written note (produced by a coach, an assignor, an assessor...) be communicated to the next assessment? Information used for the assessment is provided by the student only throughout the showcase. Could other active persons push information to the assessment?
21. Can we evaluate the impact of BSA (positive or negative impact on the student and on the assessment quality)?
22. In case of internships, what is the impact of the approval on the assessment verdict? If an internship is approved, how does the low quality of the internship impact the assessment verdict?

Evaluating growth, not result

The assessment should be viewed as a learning experience for the students. Learning is not shown by the result/output, but by the way to the result. Therefore, the aim of the assessment is to evaluate the growth, not the result. Yet the development of skills takes time and needs iterations. How can these considerations be involved further in the assessment, for it to actually be valid (and not only reliable)?

16. Assessment feedbacks vary from assessor to assessor. Some are short; some are long. Some motivate the final result; some provide an overview of the impression of the assessor. Shall the BoE monitor the quality of the assessment feedbacks, which then might require quality standards?
17. Currently, it seems that students are assessed on a block (more often than on their development), on the result (more often than on the way to get there), punctual showcase (more often than on a development expressed in the showcase). How could the showcase be transformed so that it expresses development, and not performance?
18. The attention paid on the project during the assessment seems to be far more important than the assignments/modules and other activities, often in an exaggerated way. How to bring back balance in the consideration of all activities?
19. The notion of integration, so important in the education model, is hardly well understood by students. How can ID explain it better?

Showcase

Most of the showcases are web sites based, which creates technical issues impacting the quality of the assessment and especially the re-assessment.

18. ID should decide for a standard requirement on which the showcase should work properly (e.g., working on one of the computers in front of the service desk as a standalone showcase, with windows 7, firefox version 11.0, flash 11.2....).
19. Similarly, requirements should be stated regarding the delivered CD (considered as an unambiguous storage of a showcase).

Assessment evolution in time

25. We express the need for a visualization means for the evolution of the assessment results. This is to be seen as an alerting means in case of surprising evolution.

Note that administrative H should be differentiated from assessment H.

Note that the number of SA-notes in the BoE annual report appears to be too low compared to reality. Which conditions are reported?

Frame of reference and content

Certain aspects involved in the assessment cannot be stated by word, or at least it is not the wish of the faculty to do so (e.g., level expected by the students at different blocks). We need a common ground. Yet: What is design? What is a good designer development? What is depth? Defining what is required from the student is actually making explicit the smallest common denominator, and consequently pulling the level down. We wish to illustrate our expectation by pushing the level up.

26. The frame of reference is a means to explain our expectations by the examples of great development experiences.
27. In the past a project has focused on the Frame of Reference. Learning from the reasons why it fails, ID should restart the project.
28. We need better means to deal with the intentions of the students, and to communicate with them about expectations.
29. What means quality in relation with development growth?
30. Should the Frame of Reference be common to all students, or different for ID students and outside ones?
31. The Basics Course provided by the BC will provide to students a common starting point. Shall ID build on it?

Coach development/from student to assessor

To improve the quality of the assessment (and of the coaching as well), attention should be paid to the development of the coaches and the assessors themselves.

29. It appears that the only organized time when coaches are meeting is the plenary session at the end of each semester. One experience has been done coaches to spend one session together to start their own showcase. It would be very beneficial for all and for the assessment quality to have more meetings between coaches (as coaches and as assessors) to benefit from each other experiences and concerns?
30. Could the student reflect on the assessment, as they do for assignments?
31. Regularly, some assessors need to be reminded about the procedures and the expectation of the assessment. How to prepare better new coaches to the assessment? How to regularly “refresh” assessor knowledge?
32. Information provided to coaches (and assessor) and the way it is provided should be improved.

On this topic, the education accreditation report of ID should be checked.

In the context of the Bachelor College

The BC is a source of new opportunities for ID, and a source of new challenges as well. This new context should be properly prepared and monitored, in order to ensure a proper development of ID in the future.

Note that these questions and comments are proposed by the TF as the BC is being implemented with the participation of ID. Therefore some of these points may be outdated as the document is presented to the BoE.

Assessments

32. What is the structure of a 5sects course assessment? What type of outcome (P/H verdict? P/C/H verdict? A grade?)? Who performs it?
33. What happens when the ID assessment is before the exam grades of other faculties?
34. What is the constraint of Basic course on the BSA? Can a student have a positive BSA without having successfully completed basic courses?

Monitoring

36. Does the BoE need specific tools to monitor the quality of the assessment, as ID students will be educated in other faculties? This new context might need to be monitored as well.
37. Next to figures, qualitative information and facts should be collected as well in order to understand better the evolution of ID students in the BC.
38. How will the B2x and the B3x be assessed during the transition phase towards the BC?
39. Which overview the BoE can/should follow: ID numbers or the BC numbers or both?

Non-ID students attending ID

43. How to assess non-ID students on their ID activities (verdict, grade)?
44. Outside students will fall under another OER model. This OER model demands that 30% of the verdict is based on other activities than the final exam. What are the consequences for ID?
45. Do assessments assess a growth or a result?
46. Shall one activity be assessed the same way, regardless who does it?
47. How will ID be promoted to the non-ID students, for them to accept well the specificities of ID?
48. How self study aspects be integrated in our assessment of non-ID students?
49. How do we integrate the notion of 'course level' in the ID system?

Internal vs. external

45. Shall the level of an assignment be communicated differently internally and externally?
46. Shall the description of assignments and projects differ: for inside, they are leaning activities; for outside, they are an educational unit which is assessed in a summative way (pass/fail)?

Assessment registration

The registration for assessment is mandatory, yet not automatic. It is mandatory by law. It is not automatic for the administration to plan better the assessment period.

47. Is the assessment registration process clear and well announced?
48. This could be monitored by seeing the difference between registered students and assessed students, and by the number of claims for late registered students.

Allocation constrains

5 criteria (also known as constraints) are used to distribute assessors in assessor groups (composing each assessor plenary meeting). This can have direct implications in the quality of the assessment. Shall these criteria be open?

50. These criteria should be evaluated/monitored. How?
51. Among the 5 criteria, there is no recommendation about an assignor not to be the assessor, which may cause a reduction of number of feedback voices.
52. Is it better to have one assessor for all students who has worked in a group, or a few assessors for one group?

Assessment process

59. How can we limit distraction at the back office during the intense period of the assessment (the back office and the front office are currently in the same room)?
60. Can operational information on the IDCompass (guidelines, manuals, FAQs, deadlines) facilitate the support of assessors, and therefore relief the front offices of ID

education?

61. How can we monitor the discrepancy of information between IDCompass and OASE?
62. If the assessment form is altered after the assessment meeting, can that be checked?
63. When the assessor has external constraints, can the assessment procedure receive an exception?
64. Rules and conditions of the assessment for each block should be clear (even possibly visually) stated. The info should systematically be delivered to each assessor
65. Students, coaches and assessors should have a “trick list” for the basic functions of IDCompass (such as the “notify for every change” option).
66. Guidelines for every type of activity should be clearly exposed to students and coaches.
67. Human errors occur, but need to be monitored and eventually solved. The complete assessment procedure, from the administration side, is intense because short in time and numerous in steps. How can we ensure that there is enough means (time and human and tool means) for the procedure to happen securely and smoothly?

‘Special’ situations

The TF notes that in the situations described in the following, procedures are lacking:

- If an assessor (or a coach) is missing during the plenary meeting, the verdict can be less discussed during the meeting. This situation should be avoided.
- Moreover, what happens if the verdict changes during the meeting and if the absent person disagrees?
- What happens if the assessor misses an assessment meeting or a final exhibition?
- What happens if an assignor or a coach misses the deadlines?
- What can a student do if the coach “disappears” throughout the semester?
- Should coaches inform the administration about drop-outs of students?

Appeal

- Is it possible to appeal against a certain amount of credits (especially in the context of the BC)?
- For an ID student in another faculty (and vice versa), how does the appeal work?
- How is the re-assessment procedure monitored? For example, how many re-assessed students are satisfied with the re-assessment?
- Who can neutrally support the student during the procedure of making an appeal?
- Before appealing, the students should be told that they can contact their assessor (and their coach) to obtain further feedback. This should be done prior to the appeal.

Other monitoring

- How can we better monitor the assessment of special activities (internship, minor, exchange...)?
- How can we monitor if things go fine during these special activities, in order to ease further requests?
- Can and should we monitor the workload of students? What can be done in case of over-workload?
- Can and should we monitor the workload of an assessment period, for all stakeholders?

Recommendations regarding the address

From the interview output, and based on the address of the BoE, the TF wishes to propose a series of the recommendations. Although the TF is aware that some of these recommendations go beyond the range of responsibilities of the BoE, the TF wishes to express all the important aspects expressed during the interview sessions, so the BoE is aware of these concerns and might decide either to take measures on them, or to transfer these recommendations to other boards of the faculty.

a. How is the assessment actually experienced by all stakeholders (students, assessors, coaches, administration)?

The coaches and the assessors experience the assessment period as a very busy period, due mostly to the number of assessments to do per assessor, and the length required for each assessment. Moreover, apart from the plenary session, during the entire assessment period (including its preparation) assessors feel they are on their own, and hope to do their best with few and difficult access to adapted support. To increase the quality of the assessment, recurring meeting opportunities should be created for them to share experience and knowledge.

The students worry about the reliability of the assessment, which highly depends on the assessor in their view. Although the verdict might be valid thanks to the plenary assessment meetings (yet still depending on the assessor's proposition), the feedbacks vary strongly depending on the point-of-view of the assessor. Some feedbacks are very short; some are long and detailed. Some feedbacks focus on the justification of the verdict; some focus on the learning performance of the student. Moreover, the fact that the growth levels are not clearly described is a concern for students. They are trying to understand what is expected from them in their study. Therefore, a Frame of Reference should be established to support students during each of their block and during the assessment.

The study advisors look ahead to the BC. Proper assessments will need to be proceeded for a great variety of students, with specific needs and conditions. This variety of students will complexify the procedure. The entire faculty will need greater support to deal with this new situation. Therefore, there will be a need to facilitate assessor works (by making information and means more accessible and more comprehensible). Moreover, the clarity of the assessment requirements should be balanced between students and assessors.

Similarly to students, assessors should be clearly aware of the constraints and the flexibility of the procedure (e.g., possible “respectful extension of the deadlines, need to be present at the three steps of the assessment...”). Moreover, feedback from the different sources are important to support for students’ growth; Coaches and assessors should pay the greatest attention to the quality of their delivered feedbacks. The quality and the smoothness of the assessment depend on these aspects as well.

The administrative staff experiences the assessment period as an extremely busy one. It is busy because of the quantity of information to deal with, because of the support they have to provide to the entire faculty (students and staff), because planning and allocation of the next Semesteris depending on the previous Semesterand because of the pressure due to the requirement to avoid any mistake when processing the assessment verdicts. All is done in a short time span, with limited means (human, time and space resources). All means should be audited, in order to find ways to simplify the assessment procedure. This will help all stakeholders.

The staff of the BC acknowledges and appreciates the specificity of the ID assessment system. They are looking towards a proper symbiosis between the ID assessment and the BC one.

Moreover, there is a series of common concerns about the assessment process which may have a critical impact on the assessment quality, and which should be taken into consideration by the BoE:

a.1. The members of the TF believe that the coach should not take part in the assessment (at least until the moment of the plenary assessment meeting) to ensure a greater “objectivity” of the assessment. When a second person is required, the coach should be replaced by a second assessor.

a.2. The verdict Excellence is decided in a potential unfair way, as it is relative to the plenary session meeting, and not of the entire block. The impact of this situation should be at least evaluated, if not modified.

a.3. Only the student’s exhibition and showcase are the means for the assessment. Coaches, assignors and any other staff members should also be able to inform the assessment with possibly relevant matter to be taken into consideration.

a.4. Both for viewing the online showcase and for the delivered CD, a hardware/software standard should be clarified at every assessment. This is needed to avoid any dramatic difference between what the student submits and what the assessor (or potentially the re-assessor) accesses.

a.5. All information put on IDCompass is modifiable. It should be possible for any

concerned person to be aware of any modification, and for the administration to be able to trace back the modifications.

a.6. As the ratio assessors/students decreases, the workload required to process properly the assessment procedure might rise to a level that endangers the quality of the assessment.

b. How clear for stakeholders are the philosophy, the procedures, and the (legal) regulations?

The philosophy of the assessment and its procedure needs to be clarified and made accessible by all. For example, it is important to remind the assessors that the assessment assesses the growth of the student, and not the result of the activities or the performance during the block. It is also important to remind that the assessment is per se a learning experience, and that the assessor should ensure that the student learns something out of the experience.

Moreover, specificities regarded each block should be clarified as well. Notably:

b.1. The Binding Study Advise (BSA) influences the B11 block verdicts. The B11 assessors should be clearly informed about the way how to handle the assessment.

b.2. A Hold verdict for a B22 may have crucial consequences on a valuable internship negotiated by the faculty with the inviting company. Such case may have collateral and non-desired effects. Arguing the Hold verdict because of these effects is an infringement to the assessment procedure and is a risk for its quality. Therefore, the stakeholders should be greatly aware that these effects are part of the study, and the third party should be aware of the risk during the negotiation.

b.3. Regulation exists if the student is missing any of the requirements of the assessment, and exception procedures as well. The equivalent for assessors should be visible, and created if not already existing.

If the procedure is followed, regulation issues should be episodic, and therefore treated case by case.

b.4. An appeal can be a difficult period for the student. The BoE should ensure that the student gets neutral support for the appeal.

b.5. Finally, the variety of the quality of assessment feedback should be monitored. Based on this monitoring, either guidelines could be created to support the assessors or the feedback form could evolve.

c. Are all required means satisfactorily accessible to perform the assessment smoothly?

The point b already expresses the most important means missing to ensure a high quality assessment, namely a clear and easily accessible format reminding the assessors about the procedure and the assessment specificities of each block.

c.1. However, the Frame of Reference, as described in the past, is still missing to improve the tools of ID education and to support the quality of the assessment. Without any Frame of Reference, it seems impossible to clarify the meaning of each level of growth, and therefore to express what is expected from students at each of these levels, while remaining in the realm of the ID education philosophy. The TF insists on the fact that this tool is important, and an extra effort should be put on creating it.

d. If beneficial, how can means be improved to enhance the assessment process?

Adding to the points b and c, to improve the quality of the assessment the assessor should be better supported. This can be done by at least 3 ways:

d.1. Creating events for assessor to reflect together how the assessment is being done and how it can be improved;

d.2. Improvement the content and how the assessment procedure information is provided to the assessors.

d.3. Point a6 is stressed again: The improvement of the tools and means used during the assessment should always have the crucial requirement to reduce the workload and the complexity of the assessment procedure for any of the stakeholders.

e. Which aspects should be monitored to ensure the quality of the assessment?

Many elements are already followed by the BoE to monitor the assessment quality. However, the tools used by the BoE remain fairly basics, and should be structured further:

e.1. An archive of any collected information should be created. However, the structure of this archive should be such that the BoE can easily monitor the evolution of the monitored information over a large amount of assessment. This will help the BoE to notice evolution of the assessment quality and to take measures in time. Archived information should be as large as possible (e.g., from assessment registration to final re-assessment decisions – after appeal, including minor and exchange students) and as detailed as possible (e.g., differentiating administrative Hold and classic Hold), in order to keep as open as possible future analyses of the archive.

e.2. The influence of the BSA on the student path should be evaluated.

e.3. The influence of the classes taken in the BC outside of ID should be evaluated.

Moreover, the BoE should be on the alert during the transition period during which the BC will start, as many of the decisions that ID or that the BC will take to find the best symbiosis between the two systems may impact the quality of the ID assessment. The BoE should especially pay attention to:

e.4. The ways the 5ects courses are being assessed, and how are the credits given;

e.5. The way ID students are being assessed in other faculties, and how this has an impact on the ID block assessment (in terms of philosophy, credits, and schedule);

e.6. The way ID requirements are introduced to external students, how these students are being assessed by ID, and how this is acceptable by other faculties (in terms of philosophy, credits, and schedule);

e.7. The implications of the BC course structure (basics, electives, majors and class levels) on the ID system;

e.8. The way the transition will be managed for current B1x and B2x.

Finally, the assessment quality does involve more than the assessor and the student. The BoE should also consider the procedures taking place in the education administration. The BoE should be able to evaluate:

e.9. The consistency of the criteria used to allocate the assessors. In order to keep as high as possible the variety of feedback voices for each assessment.

e.10. The means required by the education office to perform properly the assessment administrative procedures.

e.11. The workload the assessment period requires for all stakeholders. Too much workload may be the source of mistakes and lower quality.

These three points might be critical for the quality of the assessment.

f. What means are required to monitor satisfactorily the assessment?

Every semester, the BoE should review the monitored results of the previous assessment, and discuss noticeable evolutions, exceptions that occurred during the previous semester, and possible wishes to improve the monitoring.

A conclusion on the quality of the assessment should be included in the minutes of the BoE.

g. How can BoE act upon a notice of a lower quality assessment?

The TF did not find any opportunity to discuss on this question. Therefore, no answer can be addressed. However, it seems obvious that a proper monitoring and archiving of the assessment processes will provide relevant information for the BoE to be able to react to any unsatisfactory assessment quality.

28: PROCEDURE FMP/M22 ASSESSMENT FOR ACADEMIC YEAR 2011/2012

FMP In terms of FMP, there is no split between the M2.1 block which was previously regarded as preparation phase and the M2.2 block which was regarded as the realization phase. In terms of assessment, block M2.1 and M2.2 will remain separate. The students will work on their final master project (FMP) during block M2.1 and M2.2, with two go/no-go moments (see also year planning).

For more information: http://w3.id.tue.nl/nl/education/learning_activities/projects/final_master_project/

Block M2.2 For this last block, students will work on their FMP fulltime. They will go through several iterations, which result in their final design and other deliverables. They will present their work at the mid-term and end-of-term exhibition.

Panel (coach and independent assessor) The assessment panel for the student's M2.2 assessment is the same as for the M2.1 assessment. The assessment panel visits the student at an exhibition about three weeks before the graduation assessment. The panel provides feedback to the student but makes no assessment at this stage. The assessment is done only at the end of the semester, taking also into account a presentation of the FMP and showcase with the student.

Focus The focus of the M2.2 assessment is similar to the other years: the integrated whole of students' development of the overall competence of designing, their vision on designing and their growth as a designer.

Presentation Duration of the presentation is 60 minutes.

The FMP presentation concludes with a question/answer session. It may be public; this choice is left up to the student, who can take into account the feedback received during the exhibition. The assessment panel convenes after the FMP presentation and privately decides on an assessment recommendation. This is only a proposal; the actual assessment decision is taken by the plenary M22 assessor meeting. After this meeting the student will be informed about the verdict.

New for M2.2 students is that participation in the end-of-term assessment is mandatory, whether or not they consider themselves 'ready' for this. So no delays are possible anymore. For this reason we have abolished the Green Light meetings.

The outcome of the M2.2 assessment may be:

- P-verdict (possibly with an 'Excellence' qualification; is for top 15 – 20% of students doing a particular Block)
- H-verdict (which we try to reduce with the two GO / NO GO moments in Block M2.1, and with the additional 4 FMP weeks in Block M2.1))
- C-verdict, which means that the student can get an extension of two weeks (so only a condition for minor issues can be imposed).

If the student gets an H-verdict and needs to do a retry of Block M2.2, it means doing a new off-the-shelf project with special emphasis on those aspects that need further development. They can choose from the B32, B1.1 and M1.2 projects that the various Themes offer off-the-shelf. About four weeks after the start of the semester the student's FMP brief needs to be approved.

Cum laude

A 'Cum Laude' is a means to qualify the Bachelor's and Master's graduation of excellent students. A 'Cum Laude' is awarded to the top 5% of our graduates. Below, the admission requirements are stated and the formal procedure for a cum laude proposal is explained.

Admission requirements for a cum laude proposal for the Master's:

- The student has received at least two formal "Excellence" qualifications: one for the M2.2 assessment and one for another Master's Block (M1.1 – M2.1)***, and
- The student has performed an excellent FMP, as apparent from the assessment panel's written assessment feedback

If a student fulfils these admission requirements, the assessment panel might consider proposing the student for a graduation cum laude. This requires a thorough investigation of the student's complete assessment history of the Bachelor's or Master's, prior to the plenary assessor meeting involved. The assessment panel needs to support their cum laude proposal with convincing and concrete evidence of the student's excellence throughout the Bachelor's or Master's. This evidence may include:

- Visibility of the student's vision on designing and identity as a designer;
- Quotes on the student's excellence from various experts (from within and outside the department), from any clients, from peer reviewers;
- Any patent applications;
- Integration of competencies into overall competence of designing
- Publications and other extracurricular achievements;
- Relevance of the student's design(s) for industry, for the profession and for industrial design as an academic discipline;

- On hindsight: standing out from the crowd
- Employability (any good job offerings)
- Passion

***Procedure for
a cum laude
proposal***

- First the student's assessment panel proposes their case at the plenary assessor meeting, including arguments for and evidence of the student's overall excellence throughout the Master's (the outcomes of their investigation into the student's excellence: see above).
- If there is substantial support for the cum laude proposal at the plenary meeting, the chair of the meeting writes this on the Verdict form and the assessment panel can take the next step:
- The assessment panel submits a formal request to our Board of Examiners (BoE), together with their argumentation for and evidence of the student's overall excellence and the M2.2 or B3.2 Assessment form. If this information is not included, the BoE cannot take a grounded decision and the case will be dismissed. The proposal needs to be submitted by mail to ID Education Secretariat, one week before the BoE meeting takes place. See the Year Planning for these meeting dates.
- The BoE discusses the submitted proposals and decides which of the cum laude proposals will be granted.

29: ALUMNI IN DOCTORATE PROGRAMS

Doctoral candidates at Industrial Design, TU Eindhoven

- Mendels, (2013)
- Deckers, (2013)
- Bakker (2013)
- Bouwstra 2008 -
- Van der Vlist, 2008 -
- Croes, 2009 -
- Gillesen, 2009 - stopped
- Magielse, 2009 -
- Peeters, 2009 -
- Hopma, 2010 - stopped
- Megens, 2010 -
- Offermans, 2010 -
- Tieben, 2010 -
- Baha, 2011 -
- De Valk, 2011 -
- Goudsmit, 2011 -
- Ten Bhömer, 2011 -
- Ayoola, 2012 -
- Brankaert, 2012 -
- Stienstra, 2012 -
- Bogers, 2013 -
- Broekhuijzen, 2013 -
- Mols, 2013 -
- Kwak, 2013 -
- Van Gennip, 2013 -

Other doctoral candidates

- Horst, Southern Denmark (2010)
- Boer, Southern Denmark (2012)
- Visser, TU Delft (2012)
- Kleppe, TU Eindhoven, Industrial Engineering & Innovation Sciences
- Bosman, TU Delft
- Gooren, TU Delft
- Vegt, TU Delft
- Damgrave, U Twente
- Timan, U Twente
- Pluijms, Vrije Universiteit Amsterdam
- Golsteijn, Universtiy of Surrey
- Hoes, NorthUmbria
- Reitsma, NorthUmbria
- Peeters, Interactive Institute Umea
- Pijnappel, RMIT

30: QUALITY ASSESSMENT CYCLE

Input Quality Assessment Cycle

- Student response to evaluative questionnaires handed out after a learning activity
- Assignments
- Modules
- Feedback/project/coaching/assessment/theme activities
- Student project, assignment and module preferences
- Remarks made by study advisors based upon meetings with the students
- Student mentors inform study advisors on remarks made by first year students
- Remarks obtained from bi-yearly meeting with the theme champs and competence responsables
- Remarks from chairs and deputy chairs of assessment meetings
- Remarks made by coaches
- Remarks made by assessors based on coach and assignor feedback
- Remarks made by members of Educational Affairs
- Remarks by Director of Education based upon participation in educational activities, both in terms of compulsory meetings/trainings as well as educational days and information sessions
- Official complaints

Questionnaires

After each learning activity (assignment of module) a questionnaire is presented to the students to give feedback on the learning activity and the support of the assignor or lecturer. The questionnaires are distributed by the secretariat of Educational Affairs to the lecturers on the last day of the learning activity. Students are requested to fill in the forms and return them to the secretariat of Educational Affairs. At the end of the Semester an online questionnaire is sent out to all students to evaluate feedback, projects, coaching, assessment and theme activities. Coaches and assignors are informed about the results of the questionnaires that address the learning activities in which they have been involved.

Study advisors

The study advisors inform the Educational Board about remarks made by students with respect to their coaches. Student mentors have a signalling role with respect to observations regarding first year coaches, which they communicate to study advisors.

Meeting Theme Champs

Each year the Director of Education organizes approximately eight plenary meetings with the Theme Champs for general discussion. Bi-yearly an individual meeting with each Theme Champ is organized to discuss theme specific issues and individual coaches.

Meeting Competence Responsibles

Each Semester the Director of Education organizes a meeting with the Competence responsibles to discuss the assignments and modules offered. Furthermore, they discuss the integration of the competences in projects as offered within the themes.

Assessment

A coach is only allowed to participate in an assessment upon approval of the Board of Examiners. A list of available coaches is offered to the Board of Examiners including feedback on their assessment training.

A member of the Board of Examiners, or a (former) Director of Education chairs the plenary assessor meeting. If insufficient people are available, a (staff) member of the Faculty Council is requested to act as chair. Furthermore, a deputy chair is appointed to each plenary assessor meeting, preferably being a member of Educational Affairs. If needed, the deputy chair takes over the role of chair in the meeting.

The chair checks if the assessors have followed the assessment procedure appropriately and the deputy chair takes notes of the verdict discussion points. If necessary the chair takes note of remarks regarding coaching or feedback. The chair informs the Director of Education of the process of the plenary assessor meeting by means of a summary of the assessment process, remarks and an overview of notes taken by the deputy chair. The notes are collected and made available to the Board of Examiners in case an appeal to a verdict is made.

Freelance coaches/assignors

Unless coaches/assignors offer their services for a consecutive semester, coaches/assignors are only allowed to offer their services after an interview in which both a theme champ/competence responsible and a member of the Educational Board are present.

Five meetings/trainings are offered to new coaches in their first Semesteron:

- Introduction to educational model (week 1)
- Coaching
- Using ID Compass
- Giving feedback
- Assessment

For new assignors the following three meetings/trainings are relevant:

- Educational model (week 1)
- Using ID Compass
- Giving feedback

The introduction, using ID Compass, giving feedback and assessment meetings/trainings are compulsory for new coaches. Coaches with previous experience in the educational model may be exempted for some meetings/trainings after approval of the Educational Board.

Fully new coaches, with no experience in the educational model are only allowed to coach B2 students.

Educational days

To update the whole educational staff on general education related issues, and to reflect on feedback obtained from the above-mentioned input, the Director of Education organizes a bi-yearly Educational Day on the last Friday of the SDL weeks in the middle of each semester.

Closing the loop Feedback to coaches

A feedback summary is made yearly in March by the Educational Board for each coach/assignor based upon the input obtained. The deputy Director of Education discusses the feedback with freelance coaches/assignors. A development plan is made upon the feedback obtained. If feedback is positive services can be offered again. If feedback is overly negative, the freelancer will be taken out of the pool of potential coaches/assignors.

If the coach/assignor is a staff member, the feedback summary is shared with the staff member for reaction first. The coach/assignor may request a meeting with a Director of Education to discuss the feedback. Consequently, the summary is offered to the capacity group leader as input for the result and development cycle.

Feedback to themes

The evaluations of projects and theme activities resulting from the questionnaires as well as project choice and descriptions are discussed with the theme champs. Theme Champs can change their project offering based on the feedback. Project offering (title, year and tentative description) is provided in November and April to the director of education who provides feedback on the project descriptions in December and May. Descriptions are finalized in January and June. Consequently an evaluation of the theme is written which is presented to the Board.

Meeting competence responsables

Each competence is represented by a group of experts and chaired by a full professor. The Director of Education shares the assignment evaluations and student subscriptions with the experts who discuss these evaluations and change or consider new assignments in September or February. The competence responsible proposes (new) assignments by the end of September or February to the Director of Education for the upcoming semester. A meeting is organized with all competence responsables in November or April to finalize the assignment offering based upon student number prognoses.

Frame of reference

Examples of showcases as well as project, assignment and assessment feedback will be extracted and discussed with coaches during events such as trainings and educational days to improve the quality of the feedback and assessments.

31: THROUGHPUT AND DIPLOMAS

DROPOUT OF BACHELOR PROGRAM

Cohort	2006	2007	2008	2009	2010	2011
Size cohort	89	112	101	98	119	109
Dropout after 1st year	25%	29%	22%	31%	24%	28%
Dropout after 2nd year	25%	30%	28%	37%	34%	
Dropout after 3rd year	44%	32%	32%	39%		

THROUGHPUT OF BACHELOR PROGRAM

Cohort	Number of students	% of total cohort	Obtained Bachelor Degree			
			Within 3 years	Within 4 years	Within 5 years	Within 6 years
2006	67	75%	9%	48%	69%	73%
2007	80	71%	23%	69%	84%	
2008	79	78%	32%	73%		
2009	68	69%	31%			
2010	90	76%				
2011	79	72%				

NUMBER OF GRADUATES BACHELOR PROGRAM

Year	Number of Bachelor Graduates	Cum Laude	
2012	23	13 %	3
2011	91	8 %	7
2010	111	4 %	4
2009	83	4 %	3
2008	72	7 %	5
2007	67	3 %	2
2006	71		

DROPOUT OF MASTER PROGRAM

Cohort	2006	2007	2008	2009	2010	2011
Size cohort	37	51	38	38	55	58
Dropout	35%	20%	26%	21%	13%	9%

THROUGHPUT OF MASTER PROGRAM

Cohort	Number of students	% of total cohort	Obtained Bachelor Degree		
			Within 2 years	Within 3 years	Within 4 years
2006	17	46%	-	59%	71%
2007	28	53%	25%	68%	71%
2008	16	40%	31%	75%	75%
2009	28	68%	39%	61%	
2010	31	51%	42%		
2011	33	51%			

NUMBER OF GRADUATES MASTER PROGRAM

Year	Number of Master Graduates	Cum Laude	
2012	14		
2011	37	11%	4
2010	37	11%	4
2009	34	9%	3
2008	37	8%	3
2007	10		
2006	6		

32: SELECTION OF MOST RECENT GRADUATES

SELECTION OF MOST RECENT BACHELOR GRADUATES 2011/2012

S-number	Last name	First name	Project	Coach	Assessor	Graduation	Verdict	Qualification
s090991	Akker	Marianne van den	DPM63	Magielse	Bakker	28-06-12	P	
s040775	Beernink	Thomas	DPH61 Adaptive Expression	Leeuw	Langereis	28-06-12	P	
s099055	Beukering	Alice van	DPC31	Bruns	Delbressine	28-06-12	E	Cum Laude
s081414	Boheemen	Thom van	DPM70 ProTUes	Frieling	Hu	28-06-12	P	
s089211	Doesburg	Tessa van	DPI39	Nakevska	van Heel	28-06-12	P	
s093849	Dreissen	Cyriel	DPG60	Delbressine	Offermans	28-06-12	P	
s097139	Giang	Ken	DPI37	Funk	Peters	28-06-12	P	
s099930	Hoeve	Bas van	DPC34	Langereis	Brombacher	28-06-12	P	
s092070	Jaasma	Philémonne	DPC31	Bruns	Delbressine	28-06-12	E	Cum Laude
s090798	Kampen	Jacquelyn van	DPL58	Versteeg	van Heel	28-06-12	E	Cum Laude
s088309	Kampen	Robin van	DPH66	Delbressine	Eggen	28-06-12	P	
s095044	Karapun	Bowling	DPI36	van Heel	Nakevska	28-06-12	P	
s093783	Kölker	Tom	DPD38	Thompson	Toeters	28-06-12	P	
s050588	Koppenol	Tom	DPI39 Interactive Story-telling	Nakevska	van Heel	28-06-12	P	
s085731	Mangre	Ardjoen	DPL53	Toeters	Bruns	28-06-12	P	
s080249	Monnikhof	Mirthe	DPL53	Tomico	Croes	28-06-12	E	
s071219	Motie	Rawien	DPG61 Motivating Arm-Hand Use with Games	Tetteroo	van den Bremen Bremen	28-06-12	P	
s090089	Nasca	Júlia	DPH60	Lu	Chen	28-06-12	P	
s095624	Neutelings	Ineke	DPL60	de Waart	Leeuw	28-06-12	P	
s080720	Raijmakers	Tom	DPL54	Coleman	Ziedses des Plantes	28-06-12	P	

s071562	Scholten	Tim	DPI37 Reflection	Funk	van de Graaf	28-06-12	P	
s099426	Tenthof van Noorden	Leonie	DPM72	van Dam	van den Bremen	28-06-12	P	
s080677	Wiel	Marleen van der	DPG65 Design for the Smart Jacket	Chen	van den Hoven	28-06-12	E	Cum Laude
s098498	Winter- mans	Marjolein	DPC34	van de Graaf	van Dam	28-06-12	P	
s098505	Woudstra	Joshua	DPC30	Langereis	Brombacher	28-06-12	E	Cum Laude

SELECTION OF MOST RECENT MASTER GRADUATES 2011/2012

S-number	Last name	First name	Project	Coach	Assessor	Graduation	Verdict	Qualification
s070989	Al-Kaylani	Fauzi		van den Bremen	Tomico	13-7-12	C > P	
s060152	Beers	Marco		Eggen	Langereis	16-08-12	P	
s070808	Bogers	Sander		Hummels	Magielse	28-06-12	E	Cum Laude
s060969	Brankaert	Rens		den Ouden	Lonsain	28-06-12	P	
s061724	Broekhui- jsen	Mendel		Eggen	van den Bremen	28-06-12	E	Cum Laude
s060970	Donselaar	Rik van		Chen	Alkema	28-06-12	E	
s060155	Duisters	Sippe		Deckers	Eggen	28-06-12	P	
s051644	Dun	Joey van		Eggen	van den Bremen	28-06-12	E	
s060639	Erve	Dirk van		Luyk	Ross	28-06-12	P	
s070089	Geel	Laura van		Bruns	de Graaf	28-06-12	P	
s060601	Greef	Koen de		Eggen	Hengeveld	28-06-12	P	
s061571	Hoes	Stephan		Eggen	Hengeveld	28-06-12	P	
s061088	Iersel	Kim van		Bruns	Lévy	28-06-12	P	
s098634	Keratiche- wanun	Pawadee		Feijs	Terken	28-06-12	P	
s072513	Meurs	Niko van		Reindl	Mathias	28-06-12	P	
s040831	Peeters	Jeroen		Ross	Lévy	28-06-12	E	Cum Laude
s107208	Potuzakova	Dominika		Feijs	Peeters	28-06-12	P	
s090914	Siekmans	Jelmer		Luyk	Feijs	28-06-12	P	
s061197	Thielen	Mark		Delbressine	Alkema	28-06-12	P	
s040550	Verbruggen	Koen		Tomico	Frieling	28-06-12	P	

s060771	Vinken	Teun	Ross	Lévy	28-06-12	P
s020771	Wanrooij	Gilles van	Frens	Funk	28-06-12	P
s050595	Willems	Don	Alblas	Chen	28-06-12	P
s050920	Willemsen	Willem	van Essen	Bruns	28-06-12	P
s102666	Zhou	Leijing	Rauterberg	Ahn	28-06-12	P