Introduction Industrial Design (E610020)

Course Specifications
Valid in the academic year 2018-2019

Lecturers in academic year 2018-2019
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Course offerings in academic year 2018-2019
A (semester 1) Dutch

Offered in the following programmes in 2018-2019
Bachelor of Science in Industrial Design Engineering Technology 6 A

Contact hrs 72.0 h
Study time 180 h
Credits 6.0

Teaching languages
Dutch

Keywords
2-D visualisation; 3-D physical product rendering; Gestalt principles; stylisation; documentation

Position of the course
This is an introductory course on (industrial) design for first-year undergraduate students. It consists of three modules: Sketching, Prototyping and Morphology. These cover fundamental practical and theoretical aspects of design: Sketching aims to train basic visualisation skills (rendering an object in 2-D format: shapes and volumes; scale, proportion, perspective, shadowing, etc.); Prototyping engages students with the 3-D quality of an object (through the manual handling of materials. e.g., cardboard, wood, wire, metal, etc.) with the aim of producing 3-D physical prototypes/models; Morphology covers basic theories on visual grammar and composition (e.g., Gestalt principles, colour theory), and the making of selected communication tools: mood/story/material boards.

Contents
The course focuses on stylisation (‘form giving’) in which the creator/designer is the initiator and decision maker (designer-led) of the design work. The course also lays the foundation for nurturing the basic qualities of a professional designer in the following: planning of work; exploration of different ideas; experimentation with materials/methods/techniques; visualisation and communication of ideas in different media; (linear) documentation of the whole design process (through a sketchbook or notebook); meeting deadlines. There is one main course assignment and regular homework/exercises for each module. The course is offered in Dutch and English.

Initial competences
Secondary Education

Final competences

1. Competencies of ‘design attitude & participation’

Students learn to:
• Work from intuition to a methodical (‘designerly’) way
• Explore (produce many ideas) and experiment with materials and techniques
• Refine work through variations of one idea
• Work independently (self-initiated work)
• Work in a planned manner under pressure and meet deadlines
• Provide evidence of their design process through well-kept documentation (in a sketchbook/notebook)

(Approved) 1
• Communicate efficiently their work in a structured and clear way to the intended audience
• Deal with feedback in a critical way and with a positive attitude
• Engage positively with peers and instructors, and support class with constructive feedback.

2. Competencies of ‘professional skills’

**Sketching skills**
Students learn to:
• Draw basic geometric shapes in perspective correctly
• Use methods to construct (complex) cut and derived geometries in correct proportions
• Apply projection drawing in order to create positive and negative combinations of volumes
• Use different line weights to create visual hierarchy in the composition
• Compose the entire page, and use colour and shadow techniques.

**Prototyping skills**
Students learn to:
• Work with different materials with hand and machine tools
• Make (physical) product designs out of different materials
• Communicate (product) ideas in 3-D physical form/format
• Decide on best material(s) for the intended use.

**Morphology**
Students learn to:
• Look at objects and analyse their shape/form
• Recognise patterns in man-made and natural environments
• Explain/communicate design objects using correct terminology
• Create communication tools (e.g., mood/material/storyboards, slides, posters)
• Develop meaning (semantics) in shapes/products
• Transfer design characteristics of existing products into new designs/forms/products.

**Conditions for credit contract**
Access to this course unit via a credit contract is determined after successful competences assessment

**Conditions for exam contract**
This course unit cannot be taken via an exam contract

**Teaching methods**
Guided self-study, demonstration, project, lecture: plenary exercises

**Extra information on the teaching methods**
- **Sketching** techniques are taught through demonstration lessons. Students train themselves to master skills independently by means of weekly assignments.
- **Design skills on how to build prototypes** are demonstrated in the design studio/workshop. Students learn to build prototypes independently. Consultation takes place within module hours.
- The module of Morphology deals with the theory of basic design principles that students draw on when sketching and prototyping. Students receive a detailed module syllabi in the beginning of the semester.

**Learning materials and price**
Students receive an assignment brief with detailed information about requirements, specifications and submission deadlines.

**Sketching**: Slides on Minerva.

**Prototyping**: Module material is available on Minerva. A toolbox with basic tools is required that will enable students complete their design project successfully. Special tools are available in the design studio, and other required consumables are available for sale at a special student rate in the design studio area.

**Morphology**: The module uses a number of learning materials (lecture slides, audiovisual, readings, etc.) and methods (including student-led, such as, peer critiques). Detailed information about the morphology module (specs and routine) is given in class and is made available on Minerva.

**References**
Selected list (extended list is given in class)

(Approved) 2
Course content-related study coaching
Consultation is given during class hours.

Evaluation methods
end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period
Written examination

Examination methods in case of periodic evaluation during the second examination period
Written examination

Examination methods in case of permanent evaluation
Portfolio, participation, assignment, peer assessment, report

Possibilities of retake in case of permanent evaluation
examination during the second examination period is possible in modified form

Extra information on the examination methods
Students are evaluated on a prototype, the portfolio and a presentation. In addition, competences related to design attitude and active participation are monitored on a weekly basis and subject to a rubric.

Calculation of the examination mark

**First examination period**
80% permanent evaluation of which:
30%: active participation and design attitude (not possible to retake in the second exam period)
30%: portfolio for Sketching, Prototyping, Morphology
20%: final assignment

20%: periodic assessment (sketching exam).

In case a student scores lower than 10/20 for one of the permanent evaluation criteria he/she cannot pass the course. If the combined (of three modules together) final score would be over the grade of 10 on 20, but in any one of the module(s) have a grade under 10, the final course grade will be corrected to the highest non-passing grade (9/20). Following the course (during course hours) is mandatory. A minimum attendance policy (80%) applies for the ‘design attitude & participation’ grade. In case of illness, justified absences should be supported by a Doctor’s report, which needs to be submitted to the official administration, and also to be shown to the course instructors.

**Second examination period**
80% permanent evaluation in modified form.

The grade for ‘active participation & design attitude’ and passed modules is carried over from the first examination period. For the other module(s), the distribution percentages of the first examination period remain valid.

20% Periodic assessment.
Score of the second chance exam (written examination).