UNIVERSITY OF TWENTE.

ADVANCED PRODUCT DEVELOPMENT (30 EC)

Study level	Bachelor final year
Study load	30 EC
School	Industrial Design
Faculty	Engineering Technology
Provisional starting date	1 September 2016
Prerequisites	• Two years Bachelor-level training in Industrial Design Engineering or equivalent (such as Advanced Technology or Creative Technology). • Solid background in Engineering, Mathematics and Design. • Able to sketch professionally by hand and by using software (e.g. Solidworks).
Instruction language	English
English language requirement	IELTS 6.0 or TOEFL iBT 80
Tuition fees	To be paid at home institution

ABOUT THE PROGRAMME

This module focusses on how to formalise the development of products and manage product development lines. Creativity can be steered and the best options can be successfully developed using a structured approach. Furthermore, we literally touch the surface of products in a course on the effects of materials on the experience users have with their products. These are essential things to know for a successful product developer. After developing products, what is needed with regards to successfully getting a product to market? From the design all the way to the packaging; this module gives a broad overview of the whole trajectory and is perfect for students looking at a career on the organisational side of product development

COURSE OVERVIEW

First half of semester	Second half of semester
Governing Product Development	Scenario Based Product Design
Packaging Design & Management	Surface Engineering for Look and Feel
Design Management	Empirical Methods for Designers

COURSE INFORMATION

FIRST HALF OF SEMESTER

GOVERNING PRODUCT DEVELOPMENT (5 EC)

This course gives examples of processes and aspects that play important roles in product development. Additionally, the relations between these processes and aspects are depicted. This is done in such a way that students can construct their own overview of the entire area: students choose a certain product notion, and analyse the role, the importance and the consequences of the processes and aspects for that product. While doing that, they simultaneously construct a depiction of a product development process

that is suitable for that product notion and that pays adequate and weighed attention to the processes and aspects involved.

PACKAGING DESIGN & MANAGEMENT (5 EC)

This course focuses on a number of specific topics in, and aspects of, packaging and its development life cycle. It will cover both in-depth details of packaging, and will address the broader approach towards combined product/packaging development as well. Specific attention is paid to packaging materials such as plastics, carton and board, metals, glass, and flexible materials like laminates. Moreover, attention is paid to the aspects that play a role in the packaging development chain, such as costs, logistics, distribution, marketing, vulnerability, convenience, and ease of use. To adequately address all these topics simultaneously, the packaging chain is used as a basis, employing different models to support the packaging developer in achieving synthesis between product development and packaging development.

DESIGN MANAGEMENT (5 EC)

Various areas of the Design Management profession will be discussed during this course. It comprises elements of design management, brand management, related organisational matters, and searching for future developments. Theories about branding products, brand identity, creating a vision about the future of a specific brand, and the translation of brand values into product design will be discussed throughout the course.

SECOND HALF OF SEMESTER

SCENARIO BASED PRODUCT DESIGN (5 EC)

During this course, students will experience that each design project needs a dedicated design approach and that designing with requirements is not necessarily the only and best way. Furthermore, you will get insight and experience in many useful and attractive techniques to involve users in your design process. You will study several techniques that can be applied in the analysis, synthesis and evaluation phase of a design process such as card games, probes, personas and role- playing as well as participatory design techniques in which the user has an active role in the design process. In a group assignment you will develop and execute a scenario based design method for a specific use situation.

SURFACE ENGINEERING FOR LOOK AND FEEL (5 EC)

Every time a designer draws a solid line in a sketch or a (technical) drawing, he or she defines a new surface. Usually, the designer doesn't give these surfaces any special attention, but it should be noted that the surface has certain properties which can be altered and modified to better suit the use of the product and the requirements of the user. This course focuses on the 'Look and Feel' of products from a surface engineering point of view. In other words, it studies how the surface determines the visual appearance as well as the tactile properties of products. Part of the course is to making a re-design of a consumer product. During this project, the capability to apply surface engineering in daily (re-)design practice should be demonstrated by the student.

EMPIRICAL METHODS FOR DESIGNERS (5 EC)

This course provides students with both active and passive knowledge on multivariate statistical techniques typically used in empirical studies of design and marketing research. Active knowledge comprises the abilities to choose the adequate multivariate technique for combinations of data and research questions, to autonomously conduct multivariate analyses using statistical software such as SPSS, and to interpret and report the obtained results. Passive knowledge refers to the ability to critically reflect upon the assumptions made as well as the reliability and validity multivariate analyses. The course conveys this knowledge by covering five families of multivariate techniques.

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LEARNING GOALS

After successful completion of this Exchange Study Package, the student is able to:

1. Give an outline of the prospective development process based on analyses of a product notion;
2. Understand specifics of packaging design with relation to product vulnerability, resource use, and purchasing decisions;
3. Develop a design/brand strategy for a company;
4. Use several techniques for applying scenario based product design;
5. Apply surface engineering into industrial (re-)design;
6. To reflect critically upon the assumptions on multivariate statistical techniques used in empirical studies of design and marketing research.