	Studiengang: *Program:*	**Master of Science Maschinenbau** *Master of Science in Mechanical Engineering*			FACH HOCHSCHULE LÜBECK University of Applied Sciences
1	Modul: *Module:*	**Advanced Product Development** *Weiterführende Themen der Produktentwicklung*			**English** *Englisch*
		Semester *Semester*	**Dauer** *Duration*	**Status** *Status*	**Turnus** *Regular cycle*
		2. Semester	1 Semester	compulsory	annually
	Kreditpunkte *Credits*	**Aufwand** *Workload*	**Kontaktzeit** *Contact-hours*	**Selbststudium** *Student's efforts*	
	5 ECTS	150hrs	4hrs/week = 60hrs Lecture	15hrs Preparation and post processing 75hrs Self-study	

2 Beschreibung
Description

A systematic approach is of vital importance for the successful development of complex products. Advanced Product Development focuses proven methods for product development as well as for the management of development projects.

A key factor of successful products is very often the careful choice of innovative materials and economic production technologies. Therefore a part of the lecture is assigned to this topic. Further sophisticated subjects are e.g.

The teaching of this class will be shared by two professors from the field of product development and material technology.

3 Lernziele
Learning Outcomes

After successful completion of this course the students are able to use advanced methods for product development and project management. Furthermore they will have a scientific understanding about material selection considering loading situation, technical and economic requirements and manufacturing processes.

4 Schlüsselqualifikationen
Key qualifications

Sozialkompetenz *Social Competence*	Methodenkompetenz *Competence in Methods*	Selbstkompetenz / Personenkompetenz *Self-Competence Personal Competence*	Interkulturelle Kompetenz *Intercultural Competence*	Medienkompetenz *Media-Competence*
	X			

5 Lehrveranstaltung/ -methoden
Course type and methods

Lecture

- Seminar-like teaching
- Exercises and examples (case studies)

6 Vorbedingungen / Vorkenntnisse
Prerequisites

Knowledge about product development and cost calculation

7 Arbeitsmittel / Literatur
Required material / Literature

- Literature according to the current list being distributed in the class.
- Other basic Literature

Pahl, G., Beitz W., Feldhusen J., Grote, K. H.: Engineering Design, A Systematic Approach, 3rd Edition, Springer-Verlag London Limited 2007
Ehrlenspiel, K.: Intergrierte Produktentwicklung, München: Hanser, 2007
Gausemeier/ Ebbesmeyer/ Kallmeyer: Produktinnovation, München: Hanser, 2001
Franke/ Hesselbach/ Huch/ Firchau: Variantenmanagement, München: Hanser, 2002
Ashbey, M. F.: Materials selection in mechanical design, Oxford: Butterworth/Heinemann, 2003

Detailinformationen
Detail information

8 Inhalte
Course topics

Strategic product planning
Systematic Product Development
- Clarification of the task and conceptual design
- Embodiment design

Economic product design
- Cost estimation
- Size ranges and modular systems

Sustainable product development
- Eco design approach

Safety guidelines
- Machine directive
- Risk assessment and evaluation

Intellectual Property
- Patents

Project Management
- Stage Gate Model

Material selection
- Compilation of special material requirements
- Information sources
- Rating matrix
- Performance indices

9 Prüfungsform
Assessment

Written examination at the end of the term: 2 hours.

10 Voraussetzung für die Vergabe von Kreditpunkten
Requirements for granting of credits

- Successful passing of examination according to 9

11 Weiterführende Veranstaltungen
Related courses

- Escorting seminar
- Master Project & Master Thesis

12 Zuordnung
Classification

Mathematik & Naturwissenschaft *Mathematics & Natural Sciences*	Ingenieur-wissenschaften *Engineering Science*	Ingenieur-anwendungen *Engineering Application*	Entwicklung & Konstruktion *Design*	Werkstoffe *Material*	Wirtschaft, Management, Sprachen *General Education*	Anderes *Other*
		X	X	X		

13 Modulbeauftragter / Lehrpersonen
Responsible person / Lecturers

Prof. Dr. N. Kohlhase/ Prof. Dr. N. Kohlhase + Prof. Dr. O. Jacobs