Module: Product development / Engineering Design

Level	Bachelor	**Short Name**	PD
Responsible Lecturers	Kohlhase, Nils, Prof. Dr.-Ing.		
Department, Facility	Mechanical Engineering and Business Administration		
Course of Studies	Mechanical Engineering, Bachelor		
Compulsory/elective	Compulsory	**ECTS Credit Points**	4
Semester of Studies	6	**Semester Hours per Week**	4
Length (semesters)	1	**Workload (hours)**	120
Frequency	SuSe	**Presence Hours**	60
Teaching Language	English	**Self-Study Hours**	60
The following section is filled only if there is **exactly one** module-concluding exam.			
Exam Type	Project Work	**Exam Language**	English
Exam Length (minutes)		**Exam Grading System**	One-third Grades
Learning Outcomes	In teams of 3 to 5 students the students learn to develop an innovative concept for a mechanical engineering development task according to VDI guideline 2221. They can present the concept with sketches and drawings and build a design model. The student learn to present their results.		
Participation Prerequisites	Knowledge of Machine Component Design Understanding technical interdependency		
The previous section is filled only if there is **exactly one** module-concluding exam.			
Consideration of Gender and Diversity Issues	✔ Use of gender-neutral language (THL standard) ✘ Target group specific adjustment of didactic methods ✘ Making subject diversity visible (female researchers, cultures etc.)		
Applicability			
Remarks			

TECHNISCHE HOCHSCHULE LÜBECK

Module Course: Product development / Engineering Design (lecture)

(of Module: Product development / Engineering Design)

Course Type	Lecture	**Form of Learning**	Presence
Mandatory Attendance	no	**ECTS Credit Points**	2
Participation Limit		**Semester Hours per Week**	3
Group Size		**Workload (hours)**	60
Teaching Language	English	**Presence Hours**	45
Study Achievements ("Studienleistung", SL)		**Self-Study Hours**	15
SL Length (minutes)		**SL Grading System**	One-third Grades
The following section is filled only if there is a course-specific exam.			
Exam Type		**Exam Language**	
Exam Length (minutes)		**Exam Grading System**	
Learning Outcomes			
Participation Prerequisites			
The previous section is filled only if there is a course-specific exam.			
Contents	• Principle approach for product development • Product planning, systematic clarification of the task and writing of a requirement list • Solution finding based on functional analysis • Systematic combination of solutions with the morphological matrix • Evaluation of solutions • Basic rules for embodiment design, construction methods, dsign principles and design rules • Economic product development • Planning of engineering projects		
Literature	Pahl, G., Beitz W., Feldhusen J., Grote, K. H.: Engineering Design, A Systematic Approach, 3rd Edition, Springer-Verlag London Limited 2007		
Remarks			

TECHNISCHE HOCHSCHULE LÜBECK

Module Course: Product development / Engineering Design

(of Module: Product development / Engineering Design)

Course Type	Project Work	**Form of Learning**	Presence
Mandatory Attendance	no	**ECTS Credit Points**	2
Participation Limit		**Semester Hours per Week**	1
Group Size		**Workload (hours)**	60
Teaching Language	English	**Presence Hours**	15
Study Achievements ("Studienleistung", SL)		**Self-Study Hours**	45
SL Length (minutes)		**SL Grading System**	One-third Grades

The following section is filled only if there is a course-specific exam.

Exam Type		**Exam Language**	
Exam Length (minutes)		**Exam Grading System**	
Learning Outcomes			
Participation Prerequisites			

The previous section is filled only if there is a course-specific exam.

Contents	For a practical task the following contents have to be processed. The results are presented in 5 gates and described in a documentation • Writing a requirement list and presentation preparation (Gate 1) • Function analysis, finding partial solutions and presentation preparation for the Morphological Box (Gate 2) • Systematically combining the partial solutions to overall solutions, working out 2 - 3 complete solution variants and presentation preparation (Gate 3) • Evaluation of the overall solution variants and presentation preparation for the evaluation (Gate 4) • Preparation of a final presentation, an advertising poster and build a design model (Gate 5) • Preparation of a final documentation
Literature	
Remarks	