	Studiengang: *Program:*	**Bachelor of Science Maschinenbau** *Bachelor of Science in Mechanical Engineering*			FACH HOCHSCHULE LÜBECK University of Applied Sciences
1	**Modul:** *Module:*	**Design of Machine Components** *Konstruktion von Maschinenelementen*			**English** *Englisch*
		Semester *Semester*	**Dauer** *Duration*	**Status** *Status*	**Turnus** *Regular cycle*
		5. Semester	1 Semester	compulsory	annually
	Kreditpunkte *Credits*	**Aufwand** *Workload*	**Kontaktzeit** *Contact-hours*	**Selbststudium** *Student's efforts*	
	4 ECTS	120 hrs	4 hrs/week = 60 hrs Teaching	15 hrs Preparation and postprocessing 45 hrs Self-study	

2 Beschreibung
Description

This course applies mechanics of materials concepts to the design of machine components. Static and fatigue criteria are introduced and applied to different machine components.

3 Lernziele
Learning Outcomes

The main target of the course is to work out how machine components have to be designed depending on material properties and typical design rules.
Students should be able to design machine components according to given requirements e.g. for useful life.

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		X	(X)

5 Lehrveranstaltung/ -methoden
Course type and methods

Teaching

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

6 Vorbedingungen / Vorkenntnisse
Prerequisites

Classes ME-309 & ME-361 at MSOE

7 Arbeitsmittel / Literatur
Required material / Literature

- Drawing and designing equipment
- Literature according to the current list in the script
- No explicit course book required

Detailinformationen

8 Inhalte

Course topics

Introduction into the subject

Static and fatigue failure criteria

- General phenomena
- Calculation fundamentals using shafts and keys as typical examples
- Testing as an important part to get information

Bearings

- Journal and roller bearings

Gears

- Spur gears and helical gears

Threads

- Fundamentals of threaded joints

Helical springs

- Principle and basic dimensioning

9 Prüfungsform

Assessment

Prüfungsvorleistung / Prerequisite: none
Fachprüfung / Examination: written exam

10 Voraussetzung für die Vergabe von Kreditpunkten

Requirements for granting of credits

Successfully passing all individual parts of the examination according to row 9 „Assessment“.

11 Weiterführende Veranstaltungen

Related courses

- Design Project at MSOE
- Product Development / Systematic Engineering Design

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	X		

13 Modulbeauftragter / Lehrpersonen

Responsible person / Lecturers

Prof. Dr. Blechschmidt/ Prof. Dr. Blechschmidt