Name of module:	Design and development 1
Keywords:	Design, development, manufacturing, ecologic, economic,
Module number:	Not compulsory
Target groups:	3– 7 Semester, exchange students
ECTS- Credits:	4
Language of instruction:	English
Module owner:	Prof. Dr.-Ing. Andrea Buck
Date of last change:	26.04.2024

Extent of work (hours)

Workload	Contact hours	Self study	Exam preparation
120	60	30	30

Prerequisites:	Basics in Mechanical Engineering and in Design Engineering
Total target:	The aim of the module is to demonstrate the value of applying a methodological structured design and development process for state of the art products, to build up skills and understanding of ecologic and economic product design
Module number:	Not compulsory
Module content:	Design and development methodology: Design Constraints; General methods for finding and evaluating solutions/alternatives; Setting requirements; The design process (design- and manufacturing phases, V-Cycle, gate reviews, …); Change and configuration management Case studies Ecologic and economic design: Eco-Design methods (including the 10 Golden Rules). The relationship between Eco-Design and Design for Sustainability; The principles of design for manufacture and assembly; The conflict between eco-design, design for manufacture and design for assembly; Practical examples.
Reference material:	Lecture notes
Offered:	Winter semester
Relevance for other study programs:	Automotive Engineering

Submodules and assessments

Title of submodule:	Design and Development Methodology (DDM)
Type of instruction / form of learning:	Lectures, practices and exam preparation
Hours per week:	2
Aims, learning outcomes:	To demonstrate the value of applying a methodological structured design and development process for state of the art products,
Estimated student workload:	60 h

Title of submodule:	Ecologic and Economic Design (ECO)
Type of instruction / form of learning:	Lectures, practices and exam preparation
Hours per week:	2
Aims, learning outcomes:	To build up skills and understanding of ecologic and economic product design
Estimated student workload:	60 h

Examination Forms and Prerequisites for Awarding ECTS Points:	Written exam (2 x 45 min, graded)