

Courses in English

Course Description

Department	03 Mechanical, Automotive and Aeronautical Engineering
Course title	Internal Combustion Engines
Hours per week (SWS)	4
Number of ECTS credits	4
Course objective	The purpose of this module is to deliver to the student the necessary methodical and topic specific core competencies to be able to develop, operate, and assess internal combustion engines. Based on general engineering science prerequisites, engine functionality, design specifications, and modes of operation will be studied. The selection process of different types of combustion engines for various kinds of vehicular and stationary applications will be considered.
Prerequisites	Thermodynamics, Dynamics, Engineering Math, Engineering Mechanics
Recommended reading	
Teaching methods	
Assessment methods	
Language of instruction	English
Name of lecturer	Prof. Dr. -Ing. M. Doll
Email	martin.doll@hm.edu
Link	
Course content	Thermodynamics, with respect to cyclic thermal processes, thermal efficiency, combustion processes, power consumption, operating pressures, property diagrams, and more. Chemical properties, ignition qualities, fuel requirements, alternate fuels. Different type of engines: Spark ignition, diesel. Induction and exhaust processes. Open and closed loop control of the engine. Exhaust systems, exhaust emissions and their control.
Remarks	