

# Courses in English

## Course Description

<b>Department</b>	03 Mechanical, Automotive and Aeronautical Engineering
<b>Course title</b>	<b>Internal Combustion Engines</b>
<b>Hours per week (SWS)</b>	4
<b>Number of ECTS credits</b>	4
<b>Course objective</b>	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.
<b>Prerequisites</b>	Thermodynamics, Dynamics, Engineering Math, Engineering Mechanics
<b>Recommended reading</b>	
<b>Teaching methods</b>	
<b>Assessment methods</b>	
<b>Language of instruction</b>	English
<b>Name of lecturer</b>	Prof. Dr. Andreas Rau
<b>Email</b>	<a href="mailto:andreas.rau0@hm.edu">andreas.rau0@hm.edu</a>
<b>Link</b>	
<b>Course content</b>	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.
<b>Remarks</b>	