

L3090 Aerospace Propulsion

<i>Course title</i>	Aerospace Propulsion (L3090) L3090
<i>German course title</i>	Flugantriebe
<i>Name of lecturer</i>	Prof. Dr. Patrick Lemieux
<i>Other lecturers</i>	Prof. Dr.-Ing. Björn Kniesner
<i>Language</i>	English
<i>Curriculum</i>	Bachelor of Aerospace Engineering, Required Module, Semester 7, Summer and Winter
<i>Usability in curriculum / in different study programs</i>	Required Module in subject specific application
<i>Teaching Methods</i>	Course lecture 4SWS (hours per week)
<i>Time of involvement</i>	Presence: 45h – self-study: 105h
<i>Number of ECTS credits</i>	5 ECTS
<i>Recommended prerequisites</i>	mathematics, thermodynamics, fluid mechanics
<i>Course objective</i>	Mastering of following subjects: system, functioning as well as rough design of components and entire engine, thermodynamics of ideal gases, isentropic nozzle flow, characteristic curves of components, cycle optimization, functioning of turbomachines, basics of combustion, formation of pollutants and measures for reduction
<i>Course contents</i>	<ul style="list-style-type: none"> • engine requirements and types • thermodynamics (ideal gas) • gas dynamics, turbomachines, combustion • real engine cycles • turbojet/turbofan/turboprop engines • engines with afterburner • ramjet/scramjet • rocket engines
<i>Assessment methods</i>	Exam according to the legal framework of the degree program in which this course is offered. Approved aides for the examination will be published by means of the examination announcement.
<i>Literature recommendation</i>	<ul style="list-style-type: none"> • W. Bräunling, Flugzeugtriebwerke, Springer, 2004. • H. Rick, „Gasturbinen und Flugantriebe“, Springer-Verlag, 2013 • Rolls-Royce, „The Jet Engine“ • B. Kniesner, lecture notes „Flugantriebe“, University of Applied Sciences Munich
<i>Status: 16.09.2022</i>	