

**Module Description Fluid Mechanics**

Name of module:	Fluid Mechanics
Keywords:	Fluid dynamics
Module number:	Not compulsory
Target groups:	3- 7 semester exchange students
ECTS Credits:	4
Language of instructions:	English
Module owner:	Prof. Dr.-Ing. Christian Saumweber
Last update:	July 31 2023

**Extent of work (hours)**

Workload	Contact hours	Self-Study	Exam Preparation
80	40	20	20

Prerequisites:	Introductory physics and mathematics courses
Total target:	This course is an introduction to the fundamental concepts of fluid dynamics. It provides the basic tools necessary to apply the conservation principles of mass, momentum and energy to non-viscous and viscous fluids in the analysis of engineering systems.
Module contents:	Properties of Fluids Hydro- and Aerostatics Hydro and Aerodynamics <ul style="list-style-type: none"> <li>- Stream Filament Theory</li> <li>- Introduction to Gas Dynamics</li> <li>- Flows with Friction</li> <li>- Dimensional Analysis</li> </ul>
Reference material:	Lecture notes, textbooks
Offered:	Winter semester
Relevance for other study programmes:	Electrical Engineering, Mechatronics, Mechanical Engineering

**Submodules and assessments**

Title of submodule:	
Type of instruction/ form of learning:	Lectures, exercises and exam preparation
Duration:	12 weeks: September/October – December
Hours per week:	4
Aims, learning outcomes:	See above
Estimated student workload:	40
Type of Assessment:	Written Midterm and Final exam (2x 90 min), graded
Number of participants:	<b>Due to the limited number of participants, please register in advance by email to:</b> <a href="mailto:kremena.daneva@hs-esslingen.de">kremena.daneva@hs-esslingen.de</a>