

**Module: Toolbox for Fluid Mechanical Design**

<b>Level</b>	Master	<b>Short Name</b>	TFM
<b>Responsible Lecturers</b>	Warnack, Dieter, Prof. Dr.-Ing.		
<b>Department, Facility</b>	Mechanical Engineering and Business Administration		
<b>Course of Studies</b>	Mechanical Engineering, Master		
<b>Compulsory/elective</b>	Elective	<b>ECTS Credit Points</b>	5
<b>Semester of Studies</b>	1	<b>Semester Hours per Week</b>	4
<b>Length (semesters)</b>	1	<b>Workload (hours)</b>	150
<b>Frequency</b>	WiSe	<b>Presence Hours</b>	60
<b>Teaching Language</b>	English	<b>Self-Study Hours</b>	90

The following section is filled only if there is **exactly one** module-concluding exam.

<b>Exam Type</b>	Written Exam	<b>Exam Language</b>	English
<b>Exam Length (minutes)</b>	120	<b>Exam Grading System</b>	One-third Grades
<b>Learning Outcomes</b>	According to the listed contents of the lecture below, the students should be able to analyse and compute corresponding problems in fluid mechanics.		
<b>Participation Prerequisites</b>	Understanding of lectures in mathematics, fluid mechanics		

The previous section is filled only if there is **exactly one** module-concluding exam.

<b>Consideration of Gender and Diversity Issues</b>	<ul style="list-style-type: none"> <li>✓ Use of gender-neutral language (THL standard)</li> <li>✗ Target group specific adjustment of didactic methods</li> <li>✗ Making subject diversity visible (female researchers, cultures etc.)</li> </ul>
<b>Applicability</b>	
<b>Remarks</b>	

## Module Course: Toolbox for Fluid Mechanical Design (Lecture)

(of Module: Toolbox for Fluid Mechanical Design)

<b>Course Type</b>	Lecture	<b>Form of Learning</b>	Presence
<b>Mandatory Attendance</b>	no	<b>ECTS Credit Points</b>	3
<b>Participation Limit</b>		<b>Semester Hours per Week</b>	3
<b>Group Size</b>		<b>Workload (hours)</b>	90
<b>Teaching Language</b>	English	<b>Presence Hours</b>	45
<b>Study Achievements ("Studienleistung", SL)</b>		<b>Self-Study Hours</b>	45
<b>SL Length (minutes)</b>		<b>SL Grading System</b>	

The following section is filled only if there is a course-specific exam.

<b>Exam Type</b>		<b>Exam Language</b>	
<b>Exam Length (minutes)</b>		<b>Exam Grading System</b>	
<b>Learning Outcomes</b>			
<b>Participation Prerequisites</b>			

The previous section is filled only if there is a course-specific exam.

<b>Contents</b>	Awareness of different choices of tools for solving fluid mechanical problems 3D CFD – methods Simplified computational and analytical flow models Overview over experimental techniques Method combination
<b>Literature</b>	as recommended in class
<b>Remarks</b>	

## Module Course: Toolbox for Fluid Mechanical Design (Practical Training)

(of Module: Toolbox for Fluid Mechanical Design)

<b>Course Type</b>	Practical Training	<b>Form of Learning</b>	Presence
<b>Mandatory Attendance</b>	no	<b>ECTS Credit Points</b>	2
<b>Participation Limit</b>		<b>Semester Hours per Week</b>	1
<b>Group Size</b>		<b>Workload (hours)</b>	60
<b>Teaching Language</b>	English	<b>Presence Hours</b>	15
<b>Study Achievements ("Studienleistung", SL)</b>	Practical Training	<b>Self-Study Hours</b>	45
<b>SL Length (minutes)</b>		<b>SL Grading System</b>	Pass

The following section is filled only if there is a course-specific exam.

<b>Exam Type</b>		<b>Exam Language</b>	
<b>Exam Length (minutes)</b>		<b>Exam Grading System</b>	
<b>Learning Outcomes</b>			
<b>Participation Prerequisites</b>			

The previous section is filled only if there is a course-specific exam.

<b>Contents</b>	A selection of different methods as described under contents of lecture is applied to practical examples.
<b>Literature</b>	as recommended in class
<b>Remarks</b>	