

**Module: Material Testing 1**

<b>Level</b>	Bachelor	<b>Short Name</b>	WkP1
<b>Responsible Lecturers</b>	Prof. Dr.-Ing. Ulrike Täck		
<b>Department, Facility</b>	Mechanical Engineering and Business Administration		
<b>Course of Studies</b>	Mechanical Engineering, Bachelor		
<b>Compulsory/elective</b>	Elective	<b>ECTS Credit Points</b>	5
<b>Semester of Studies</b>	5	<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>		<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 **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>	This module is related to the modules heat treatment, analytics of materials
<b>Remarks</b>	

## Module Course: Material Testing 1 Lecture

(of Module: Material Testing 1)

<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>	Written Exam	<b>Exam Language</b>	English
<b>Exam Length (minutes)</b>	90	<b>Exam Grading System</b>	One-third Grades
<b>Learning Outcomes</b>	Know basic destructive and non-destructive testing methods Know influence of materials and testing conditions on testing results Learning to document practical experiments		
<b>Participation Prerequisites</b>	Prerequisite is module „Werkstoffkunde“		

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

<b>Contents</b>	Basic destructive mechanical testing, such as tensile testing, hardness testing, sharp testing / Non-destructive testing such as ultrasonic and x-ray testing (list of topics is not exclusive)
<b>Literature</b>	H. Blumenauer: Werkstoffprüfung. Leipzig: VEB Verlag für Grundstoffindustrie / H. Krautkrämer: Werkstoffprüfung. mit Ultraschall. Berlin Heidelberg: Springer-Verlag / S. Steeb, et al.: Zerstörungsfreie Werkstück- und Werkstoffprüfung. Kontakt und Studium Band 243. Renningen: Expert Verlag / 20
<b>Remarks</b>	

## Module Course: Material Testing 1 practical Training

(of Module: Material Testing 1)

<b>Course Type</b>	Practical Training	<b>Form of Learning</b>	Presence
<b>Mandatory Attendance</b>	yes	<b>ECTS Credit Points</b>	2
<b>Participation Limit</b>		<b>Semester Hours per Week</b>	1
<b>Group Size</b>	10	<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>	Conducting mechanical Tests with different materials and/or components, evaluation and interpretation of results
<b>Literature</b>	In addition to literatures for lecture: E. Macherauch et. al: Praktikum in Werkstoffkunde, Vieweg + Teubner
<b>Remarks</b>	