

# Module Specialized Biomechanics

Module Name: Specialized Biomechanics

Module Number	X4M 2345 S	Level	Master	Short Name	SB
Responsible Lecturers	Dr.-Ing. Robert Wendlandt				
Department, Facility	UKSH				
Course of Studies	Biomedical Engineering, Master				
Compulsory/elective	Elective	ECTS Credit Points	2		
Semester of Studies	2	Semester Hours per Week	2		
Length (semesters)	1	Workload (hours)	60		
Frequency	SuSe	Presence Hours	25		
Teaching Language	English	Self-Study Hours	35		
Consideration of Gender and Diversity Issues	<input checked="" type="checkbox"/> Use of gender-neutral language (THL standard) <input type="checkbox"/> Target group specific adjustment of didactic methods <input type="checkbox"/> Making subject diversity visible (female researchers, cultures etc.)				
Applicability	Biomedical Engineering				
Remarks	None				

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### Course 1: Specialized Biomechanics Lecture and lab

Course Number		Short Name	SB
Course Type	Lecture and lab	Form of Learning	Presence
Mandatory Attendance	<input checked="" type="checkbox"/>	ECTS Credit Points	2
Participation Limit	None	Semester Hours per Week	2
Group Size (practical training, exercises, ...)	None	Workload (hours)	60
Teaching Language	English	Presence Hours	25
Study Achievements („Studienleistung“, SL)	Graded project	Self-Study Hours	35
SL Length (minutes)	n. a.	SL Grading System	n. a.
Exam Type	Written Exam	Exam Language	English
Exam Length (minutes)	90	Exam Grading System	One-third Grades
Learning Outcomes	Basis regulatory requirements for orthopaedic medical devices. Theoretical and practical knowledge on simulation methods in biomechanics.		
Participation Prerequisites	Basic knowledge in Biomechanics, Linear algebra		
Contents	<ul style="list-style-type: none"> <li>• Mechanical testing of artificial joints and fracture plates</li> <li>• Motion analysis</li> <li>• Simulation of rigid body systems</li> <li>• Theory and application of finite element analysis</li> </ul>		
Literature	Hibbeler, R.. Mechanics of Materials. Prentice Hall, 2010 Madenci, E., Guven, I.: The Finite Element Method and Applications in Engineering Using ANSYS. Springer, 2006		
Remarks	Board, LCD-projector, models, Computer Lab		