

Module: Medical Technology Lab

Level	Master	Short Name	MTL
Responsible Lecturers	Müller, Stefan, Prof. Dr.-Ing.		
Department, Facility	Applied Natural Sciences		
Course of Studies	Regulatory Affairs, Master		
Compulsory/elective	Compulsory elective	ECTS Credit Points	2,5
Semester of Studies	3	Semester Hours per Week	2
Length (semesters)	1	Workload (hours)	75
Frequency	WiSe	Presence Hours	10
Teaching Language	English	Self-Study Hours	65

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

Exam Type	Project Work	Exam Language	English
Exam Length (minutes)		Exam Grading System	One-third Grades
Learning Outcomes	The laboratory course deepens the theoretical knowledge gained in the Medical Technology I lecture through hands-on experience with selected equipment. Students gain insight into various standard procedures in medical technology. As a result, they are able to evaluate the functionality of new procedures.		
Participation Prerequisites			

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

Consideration of Gender and Diversity Issues	✓ Use of gender-neutral language (THL standard) ✓ Target group specific adjustment of didactic methods ✓ Making subject diversity visible (female researchers, cultures etc.)
Applicability	
Remarks	

Module Course: Medical Technology Lab

(of Module: Medical Technology Lab)

Course Type	Practical Training	Form of Learning	Presence
Mandatory Attendance	no	ECTS Credit Points	2,5
Participation Limit		Semester Hours per Week	2
Group Size		Workload (hours)	75
Teaching Language	English	Presence Hours	10
Study Achievements ("Studienleistung", SL)	Practical Training	Self-Study Hours	65
SL Length (minutes)		SL Grading System	One-third Grades

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

Exam Type		Exam Language	
Exam Length (minutes)		Exam Grading System	
Learning Outcomes			
Participation Prerequisites			

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

Contents	• Introduction (fundamentals, definitions, safety, balance between safety and efficacy/benefit) • Risk-based approach – risk management concepts • Regulatory framework and standards (technical standards) regarding safety: process standards, general product standards, and standards for specific products • Physical and mechanical safety • Electrical safety • Invasive blood pressure measurement • Biological safety • Functional safety • Safety in use – usability
Literature	1. Wintermantel E, Ha S-W: Medizintechnik – Life Science Engineering. 5th edition, Springer Heidelberg, Berlin (2009); ISBN: 978-3-540-93935-1 (e-ISBN: 978-3-540-93936-8) 2. Rüdiger Kramme (Ed.): Medizintechnik. 3rd edition; Springer Medizin Verlag Heidelberg (2007); ISBN-13 978-3-540-34102-4

3. Alexander K, et al.: Good Design Practice for Medical Devices and Equipment – A Framework. University of Cambridge Engineering Design Centre (2001) ISBN 1-902546–08-3
4. Havel, P.: How to Design Safe Medical Products. Machine Design (2014) 62-69; ISSN: 0024-9114

Remarks	
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