Module MatLab - Project

Module Name: MatLab - Project

Module Number		Level Master	Short Name MATLAB
Responsible Lecturers	Prof. Dr. rer. nat. Tim Jürgens		
Department, Facility	THL, Applied Natural Sciences		
Course of Studies	Biomedical Engineering, Master		
Compulsory/elective	Compulsory	ECTS Credit Points	4
Semester of Studies	1	Semester Hours per Week	4
Length (semesters)	1	Workload (hours)	100
Frequency	WiSe	Presence Hours	40
Teaching Language	English	Self-Study Hours	60
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	Biomedical Engineering		
Remarks	None		

Module MatLab - Project

Module Course MatLab - Project

Course 1: MatLab - Project

Course Number		Short Name	MATLAB
Course Type	Exercise	Form of Learning	Presence
Mandatory Attendance	☒	ECTS Credit Points	4
Participation Limit	25	Semester Hours per Week	4
Group Size (practical training, exercises, …)	2	Workload (hours)	100
Teaching Language	English	Presence Hours	40
Study Achievements („Studienleistung“, SL)	Exercise	Self-Study Hours	60
SL Length (minutes)	90	SL Grading System	One-third Grades
Exam Type	Written Exam	**Exam Language**	English
Exam Length (minutes)	60	**Exam Grading System**	One-third Grades
Learning Outcomes	• The students are able to solve basic programming exercises using MATLAB • The students know the syntax of script language MATLAB • The students can apply a research-oriented task towards digital implementation with MATLAB • The students are able to use multiple ways of data visualization using MATLAB • The students understand basic concepts of signal processing with MATLAB-realized algorithms		
Participation Prerequisites	None		
Contents	• Datatypes • Basic built-in MATLAB functions • Matrices and vectors • Basic and advanced plotting tools • Switch- and if-statements, for- and while-loops • Boolean operators • Cell and struct arrays		
Literature	• S. Eshkabilov, *„Beginning MATLAB and Simulink: From Novice to Professional“*, Apress publishing, 2019. • T. Lyche, *„Exercises in Computational Mathematics with MATLAB (Problem Books in Mathematics)”*, Springer publishing, 2014. • E. Tzvi, S. Oung, *„MATLAB introduction“*, electronic lecture manuscript, 2017.		
Remarks	None		