

COURSE DESCRIPTION

COURSE TITLE	Mathematics with Matlab
Course number	303
Person in charge	Language and Electives Centre
Type of course	Elective (lecture with practical programming part)
Course of studies	all (especially engineering courses)
Course level	Undergraduate
Prerequisites	Engineering mathematics Physics is advantageous
Lessons per week	2
ECTS	2
Course assessment	Seminar Paper (programming projects in groups of 2-3)
Course language	German
Lecturer	Prof Florian Flossmann
Course objectives	<p>After successful completion of the course, the students are able to solve mathematical problems, as they occur in their studies and professional life, using the software environment "Matlab".</p> <p>In particular:</p> <ul style="list-style-type: none"> • the students have a command of the syntax of Matlab • the students are familiar with the typical structure of a Matlab program • the students divide a program into sensible sub-modules • the students solve programming tasks in a structured, planned, sensible manner • the students are able to familiarise themselves with further Matlab functions independently using the Matlab help and online sources • the students can read and process external data and present it graphically • the students can solve typical mathematical problems (differentiation, integration, equation systems, matrices, vectors, curve discussions, etc.) using Matlab • the students can solve further physics questions numerically using Matlab

Course contents	<ul style="list-style-type: none"> • Basics of Matlab syntax & important commands • Symbolic calculation with Matlab • Graphical presentations • Programming in Matlab (program structure, sub-routines, user interaction with programs, addressing interfaces, saving and reading data...)
Teaching methods	Lecture with exercise on the computer, projects in group work
Textbook	
Recommended reading	Script
Specific requests	Computer room required
Course is part of the additional certificate...	Not relevant.