

Module Nr.	Credits	Workload	Semester	Frequency	Duration
SE-C-1	6 CP	180 h	1	Yearly (WS)	1 Semester
Courses			Contact time	Self-study	Group size
Mathematical Aspects of Differential Equations and Numerical Mathematics			4 h/week	120 h	---
Mathematical Aspects of Differential Equations and Numerical Mathematics					
Learning outcomes					
After successfully completing the module the students					
<ul style="list-style-type: none"> • should understand the mathematics side of the Finite Element Method for elliptic PDE in low dimensions, appropriate SOBOLEV geometries, the FEM for DIRICHLET and NEUMANN problems. • should attain familiarity with modern methods and concepts for the numerical solution of complicated mathematical problems 					
Content					
Basic concepts and techniques for finite- and infinite-dimensional function spaces stressing the role of linear differential operators. Numerical algorithms for solving linear systems. The mathematics of the finite element method in the context of elliptic partial differential equations (model problems) in dimension two.					
Teaching Methods					
Lecture (2h / week), Exercises (2h / week) / English					
Modes of assessment					
Written examination (180 min)					
Requirements for the award of credit points					
Passing the written examination					
Module applicability (in other study programs)					
Master Computational Engineering					
Weight of the mark for the final score					
5 %					
Module coordinator and lecturer(s)					
Prof. Dr. B. Bramham					
Other information					