Data:	NADE. MA. Nr. 3214	Version: 01.06.2014	Start Year: SoSe 2012
Module Name:	**Numerical Analysis of Differential Equations**		
(English):			
Responsible:	Eiermann, Michael / Prof. Dr.		
Lecturer(s):	Eiermann, Michael / Prof. Dr. Rheinbach, Oliver / Prof. Dr. Helm, Mario / Dr.		
Institute(s):	Institute of Numerical Mathematics and Optimization		
Duration:	1 Semester(s)		
Competencies:	Students shall have an understanding to fundamental techniques for the numerical solution of ordinary and partial differential equations. The students know relevant terms in English.		
Contents:	ODEs: Euler methods, Runge Rutta Methods, Linear Multistep Methods, Stability, Stiffness; PDEs: Finite Difference techniques, time stepping, von Neumann stability analysis. International literature and relevant terms in English are explained.		
Literature:	Finite Difference Methods for Ordinary and Partial Differential Equations von Randy Leveque, University of Washington		
Types of Teaching:	S1 (SS): Lectures (2 SWS) S1 (SS): Exercises (1 SWS)		
Pre-requisites:	**Misc:** Advanced mathematics course for scientists and engineers. Some familiarity with the theory or applications of differential equations is helpful		
Used in:	Verfahrenstechnik, DIPL (WP) Computational Science and Engineering, MA (WP)		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [120 min]		
Credit Points:	3		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 1]		
Workload:	The workload is 90h. It is the result of 45h attendance and 45h self-studies.		