



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Mathematics

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Doctor in Mathematics

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MODULE HANDBOOK

Module Name	<i>Topic in Computational Differential Equation</i>
Module level, if applicable	<i>Doctoral Program</i>
Code, if applicable	MMM 7602
Subtitle, if applicable	-
Courses, if applicable	<i>Topic in Computational Differential Equation</i>
Semester(s) in which the module is taught	I or II (first year)
Person responsible for the module	<i>Chair of Computational Mathematics Research Group</i>
Lecturer(s)	<i>Dr. Sumardi, M.Si</i> <i>Prof. Imam Solikhudin, PhD</i>
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	Elective
Teaching methods	<i>lecture and project.</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: The total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes self-study per week.</i>
Credit points	3
Required and recommended prerequisites for joining the module	<i>existing competences in Numerical Method and differential equation</i>

Module objectives/intended learning outcomes	<p>After completing this course the students should have :</p> <ul style="list-style-type: none"> • CO 1. Combining one or more numerical methods in ordinary or partial differential equations • CO 2. Evaluating new numerical methods to solve some problems in the field of differential equations or their applications. • CO3. Develop learned numerical methods to solve problems in the field of computational differential equations
Content	<p>In this course, students must carry out several academic activities under the supervision of the lecturer. Academic activities are carried out based on literature studies to master one or more numerical methods in the field of differential equations.</p> <p>The topic and detailed syllabus for this course will be determined in relation to the student's research topic.</p>
Examination forms	oral présentation.
Study and examination requirements	Requirements for successfully passing the module
Media employed	White/Black Board, LCD Projector, Laptop/Computer
Reading list	<p>Detailed references will be delivered by the lecturer at the first meeting that depending on topic dissertation.</p> <p>Among the references used are:</p> <ol style="list-style-type: none"> 1. Granville Sewell, 2005, The numerical solution of ordinary and partial differential equations, John Wiley & Sons, Inc. 2. Mark H. Holmes, 2007, Introduction to Numerical Methods in Differential Equations, Springer Science+Business Media, LLC. 3. Stanoyevich A., 2005, Introduction to Numerical Ordinary and Partial Differential Equations Using MATLAB, John Wiley & Sons, Inc. 4. John C. Strikwerda, Finite Difference Schemes and Partial Differential Equations, SIAM.

CO-PLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
CO 1	v	v	v		v	v
CO 2	v	v	v			
CO 3	v		v		v	

Compilation Date :

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