



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 designation	<i>Topic in Computational Differential Equation</i>
Code, if applicable	MMM 7602
Subtitle, if applicable	<i>Topic in Computational Differential Equation</i>
Semester(s) in which the module is taught	<i>1st or 2nd semester</i>
Person responsible for the module	<i>Chair of the Lab. of Computation of Mathematics</i>
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	<i>Compulsory / elective / specialisation</i>
Teaching methods	<i>case based learning, lecture and project.</i>
Workload (incl. contact hours, self-study hours)	<i>Total workload is 232 hours per semester, which consists of 50 minutes lectures per week, 120 minutes structured activities per week, 120 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.</i>
Credit points in Credit Units	<i>3</i>
Required and recommended prerequisites for joining the module	<i>existing competences in Numerical Method and differential equation</i>
Module objectives/intended learning outcomes	<i>After completing this course, the students should be able to:</i> <ul style="list-style-type: none"><i>CO 1. Combine one or more numerical methods in ordinary or partial differential equations</i><i>CO 2. Evaluate new numerical methods to solve some problems in the field of differential equations or their applications.</i><i>CO3. Develop learned numerical methods to solve problems in the field of computational differential equations</i>

Content	<p><i>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.</i></p> <p><i>The topic and detailed syllabus for this course will be determined in relation to the student's research topic.</i></p>														
Examination forms	<p><i>oral présentation, essay.</i></p>														
Study and examination requirements	<p><i>To pass this course, students must obtain a minimum grade of B. The final mark will be weighted as follows:</i></p> <table border="1"> <thead> <tr> <th><i>No</i></th> <th><i>Assessment method</i></th> <th><i>Weight</i></th> </tr> </thead> <tbody> <tr> <td><i>1.</i></td> <td><i>Oral Presentation</i></td> <td><i>70</i></td> </tr> <tr> <td><i>2.</i></td> <td><i>Essay</i></td> <td><i>30</i></td> </tr> <tr> <td></td> <td><i>Total</i></td> <td><i>100</i></td> </tr> </tbody> </table>			<i>No</i>	<i>Assessment method</i>	<i>Weight</i>	<i>1.</i>	<i>Oral Presentation</i>	<i>70</i>	<i>2.</i>	<i>Essay</i>	<i>30</i>		<i>Total</i>	<i>100</i>
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Reading list	<p><i>Detailed references will be delivered by the lecturer at the first meeting that depending on topic dissertation.</i></p> <p><i>Among the references used are:</i></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	

Last Modified Date: January 2024