



UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION

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Bachelor of Science in Mathematics

MODULE HANDBOOK

Module name:	Engineering Mathematics
Module level,if applicable:	Undergraduate
Code:	MAT6352
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	6 th
Module coordinator:	Husna 'Arifah, M.Sc.
Lecturer(s):	Husna 'Arifah, M.Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Elective Course
Teaching format / class hours perweek during the semester:	150 minutes lectures and 180 minutes structured activities per week.
Workload:	Total workload is 136 hours per semester which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks.
Creditpoints:	3
Prerequisites course(s):	Differential Equations (MAT6314)
Course Outcomes	After taking this course the students have ability to: CO1. Communicate ideas in solving mathematical problems in writing or verbally. CO2. Demonstrate collaborative attitude and independence in carrying out individual tasks and group assignments CO3. Able to understand the notions of differential equations,

	<p>the concept of phase space, stability and use power series method to find solutions differential equations.</p> <p>CO4. Able to use the power series method to find the Bessel function formula.</p> <p>CO5. Able to use Laplace's transformation concept to solve problems of differential equations</p>															
Content:	This course discusses the application systems of differential equations, phase space, stability, the power series of differential equations, Bessel functions, and Laplace Transforms.															
Study/exam achievements:	<p>CO1: Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.</p> <p>The final mark will be weight as follow:</p> <table border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO2, CO3, CO4 and CO5</td> <td>a. Individual Assignment b. Group Assignment c. Quiz d. Mid e. Final Exam</td> <td>Presentation / written test</td> <td>10% 20% 20% 20% 30%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO2, CO3, CO4 and CO5	a. Individual Assignment b. Group Assignment c. Quiz d. Mid e. Final Exam	Presentation / written test	10% 20% 20% 20% 30%	Total				100%
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Total				100%												
Forms of media:	Board, LCD Projector, Laptop/Computer															
Literature:	<ol style="list-style-type: none"> 1. Kreysig, E. 2006. <i>Advanced Engineering Mathematics</i>. Edisi 9. Singapore: John Willey & Sons, Inc. 2. Wilson. B. Howard, Dkk., 2002. <i>Advanced Mathematics and Mechanics Applications Using Matlab</i>, New York: Chapman & Hall 3. Boyce, W.E. and Dprima, R.C. 1997. <i>Elementary Differential Equations and Boundary Value Problems</i>. 															

	<p>Sixth Edition. New York: John Wiley & Sons, Inc.</p> <p>4. Ross, S.L. 1984. <i>Differential Equations</i>. Third Edition. New York: John Wiley & Sons, Inc</p>
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PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1		✓								
CO2			✓							
CO3					✓					
CO4						✓				
CO5							✓			