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:	Initial and Boundary Value Problems
Module level,if applicable:	Undergraduate
Code:	MAT6354
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	7^{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 partial differential

<table>
<tr><td></td><td>equations, Fourier series, Integral Fourier and Fourier transforms
CO4. Able to use the concepttravelling waves equations to find the solution of initial and boundary value problems</td></tr>
<tr><td>Content:</td><td>This course discusses the application ofpartial differential equations, fourier series, Fourier integrals, Fourier transforms and travelling waves equations.</td></tr>
<tr><td>Study/exam achievements:</td><td>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 attitudeif they show it significantlycompared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of therequirements to pass the course. Students will pass from this course if at least have a good attitude.

The final mark will be weight as follow:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO2, CO3 and CO4</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>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literature:</td><td>1. Humi, M. And Miller, Wil B,1992, Boundary Value Problems and Partial Differential Equations, PWS KENT Publishing Company, Boston.
2. Braun, M. Differential Equation and Their Applications. 1983. Third Edition. USA : Springer-Verlag New York, Inc.
3. Zill, Dennis G., Cullen, Michael R. 1997. Differential Equations with Boundary-value Problems. Fourth Edition. USA : Brooks/Cole Publishing Company.</td></tr>
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PLO and CO mapping

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