



# MODULE HANDBOOK PARTIAL DIFFERENTIAL EQUATION

**BACHELOR DEGREE PROGRAM  
DEPARTMENT OF MATHEMATICS  
FACULTY OF SCIENCE AND DATA ANALYTICS  
INSTITUT TEKNOLOGI SEPULUH NOPEMBER**

# MODULE HANDBOOK

## PARTIAL DIFFERENTIAL EQUATION

Module name	<b>Partial Differential Equation</b>	
Module level	Undergraduate	
Code	KM184503	
Course (if applicable)	Partial Differential Equation	
Semester	Fall (Ganjil)	
Person responsible for the module	Dr. Tahiyatul Asfihani, S.Si, M.Si	
Lecturers	Dr. Drs. Chairul Imron, MIKomp Drs. Kamiran, M.Si Dr. Tahiyatul Asfihani, S.Si, M.Si	
Language	Indonesia and English	
Relation to curriculum	Undergraduate degree program, <b>mandatory</b> , 5 <sup>th</sup> semester.	
Type of teaching, contact hours	Lectures, <60 students	
Workload	<ol style="list-style-type: none"> <li>1. Lectures : 3 x 50 = 150 minutes per week.</li> <li>2. Exercises and Assignments : 3 x 60 = 180 minutes (3 hours) per week.</li> <li>3. Private learning : 3 x 60 = 180 minutes (3 hours) per week.</li> </ol>	
Credit points	3 credit points (sks)	
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.	
Mandatory prerequisites	Ordinary Differential Equations	
Learning outcomes and their corresponding PLOs	<p>Course Learning Outcome (CLO) after completing this module,</p> <p>CLO-1 Be able to understand physic problems or natural phenomena form in partial differential equations, analyze and solve them.</p> <p>CLO-2 Be able to master the right methods to solve partial differential equations, analyze the characteristics and behavior of the system.</p> <p>CLO-3 Be able to prove the existence and solvency of solution for the Liouville Strum problem.</p> <p>CLO-4 Be able to cooperate in analyzing and completing natural phenomena in the form of partial differential equations.</p>	

	CLO-5 Be able to communicate scientifically both orally and in writing.	
Content	This lecture discusses the meaning of partial differential equations, real problems in the form of partial differential equations and methods and related theorems for solving them.	
Study and examination requirements and forms of examination	<ul style="list-style-type: none"> <li>• In-class exercises</li> <li>• Assignment 1, 2</li> <li>• Mid-term examination</li> <li>• Final examination</li> </ul>	
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.	
Reading lists	<p>Main:</p> <ol style="list-style-type: none"> <li>1. Howard Anton, 1995. "Multivariable Calculus", John Wiley &amp; Sons, Inc, Singapore .</li> <li>2. Haberman, R., "Applied Partial Differential Equation", 2003</li> <li>3. Pinchover, Y., Rubinstein, J., An Introduction to Partial Differential Equations, Cambridge, 2005</li> </ol> <p>Supporting:</p> <ol style="list-style-type: none"> <li>1. Pulcell J.E., Rigdon S.E., Vargerg D, 2000. "Calculus", Prentice Hall, New Jersey.</li> <li>2. Xiangmin, 2009. "Applied Multivariable Calculus".</li> </ol>	

