



Module Handbook

Module Name :	<i>Persamaan Diferensial Parsial</i> Partial Differential Equations
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420103110
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	5 th / third year
Module coordinator(s)	Dr. Abadi, M.Sc
Lecturer(s):	Dr. Abadi, M.Sc Rudianto Artiono, M.Si Dimas Avian Maulana, M.Si
Language:	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum:	Compulsory/ Elective
Teaching format/class hours per week during the semester:	3 contact hours of lectures (<i>sks</i> or credit unit*)
Workload :	3 x 50 minutes lectures, 3 x 60 minutes structured activity, and 3 x 60 minutes individual activity per week, 14 weeks per semester 119 total hours per semester ~ 4.77 ECTS**
Credit Unit:	3 credit unit (4.77 ECTS)
Requirements:	Ordinary Differential Equation Multivariable Calculus



<p>Learning goals/competencies:</p>	<p>Knowledge (KNO-1) Demonstrating mathematical knowledge and mathematical insight</p> <p>CLO-1: Demonstrate mathematical knowledge in the first-order linear of PDEs, the second-order linear of PDEs, the wave equation and the heat equation</p> <p>Knowledge (KNO-2) Identifying and explaining the characteristics of mathematical problems</p> <p>CLO-2: Identify the characteristic of mathematical problem in the first-order linear of PDEs, the second-order linear of PDEs, the wave equation and the heat equation</p> <p>CLO-3: Explain the characteristics of mathematical problems in the first-order linear of PDEs, the second-order linear of PDEs, the wave equation and the heat equation</p> <p>Skill (SKI-2) Applying the basic principles of mathematics to solve simple* mathematical problems.</p> <p>CLO-4: Implement basic principle of mathematics to solve the first-order linear of PDEs, second-order linear of PDEs, wave equation and heat equation.</p> <p>Competences (COM-3) Solving mathematical problems using technology</p> <p>CLO-5: Solve mathematical problem in the first-order linear of PDEs, second-order linear of PDEs, wave equation and heat equation using technology.</p>
<p>Content</p>	<p>This course discusses about the first-order linear of PDEs, the second-order linear of PDEs, the wave equation, and the heat equation. Lecture activities are carried out in a student center with discussions, observations, project assignments, and presentations.</p>

<p>Attribute Soft skill:</p>	<p>Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class.</p>
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Study/exam achievements:	The final grade (<i>NA</i>) is calculated based on the following ratio:		
	Assessment Components	Percentage of contribution	
	Participation	20%	
	Assignment	30%	
	Mid-semester test	20%	
	Final semester test	30%	
	Grade conversion of 0-100 scale into 0-4 scale is set as below:		
	Letter	Number	Grade Interval
	A	4,00	$85 \leq A \leq 100$
	A-	3,75	$80 \leq A- < 85$
	B+	3,50	$75 \leq B+ < 80$
	B	3,00	$70 \leq B < 75$
	B-	2,75	$65 \leq B- < 70$
	C+	2,50	$60 \leq C+ < 65$
	C	2,00	$55 \leq C < 60$
	D	1,00	$40 \leq D < 55$
	E	0,00	$0 \leq E < 40$
Learning Methods :	Student-centered approach; project-based learning; lecturer and discussion; and presentations (structured activities)		
Form of Media:	Power point slides; video; worksheets, and textbooks		



Literature (primary references):	<ol style="list-style-type: none">1. Olver, Peter J. 2020. Introduction to Partial Differential Equations. Springer2. Haberman, R. 2015. Applied Partial Differential Equations with Fourier Series and Boundary Value Problems. Pearson3. Strauss, W. A. 2008. Partial Differential Equations, an Introduction (2nd Edition). Wiley4. Soehardjo. 2004. Persamaan Diferensial Parsial. Uranus5. Dennemeyer, R. 1968. Introduction to Partial Differential Equations and Boundary Value Problems. McGraw-Hill6. Weinberger, H. 1965. A First Course in Partial Differential Equations. Dover Publication
Notes:	<p>*1 credit unit or <i>sks</i> in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</p> <p>**1 credit unit or <i>sks</i> = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019</p>