



Elementary Differential Equations

Module Name	Course Module
Module Levels	Degree program
Code, if applicable	3115-207-3
Sub-titles, if applicable	-
Courses, if applicable	Elementary Differential Equations
Semester(s) in which the module is taught	3 (Odd Semesters)
Person responsible for the modules	Drs. Tri Murdiyanto, M.Sc.
Lecturer(s)	Drs. Tri Murdiyanto, M.Si, Leni Dhianty S.Pd, M.Pd, Dr. Anni Sofia
language	Indonesian
Relations to Curriculum	This course is a compulsory course provided in the second semester
Type of teaching, contact hours	<p>The teaching methods used in this course are:</p> <ul style="list-style-type: none"> - Studying (synchronous:material presentations, group discussions and class discussions) - Structured assignments (Asynchronous in LMS: Discussion forums for individual assignments and questions) - Project Base Learning <p>Class capacity for lectures is 40 students. The time for lectures is one meeting of 150 minutes</p>
Workloads	<p>For this course, students are required to fulfill a minimum of 136 hours in one semester, which consists of:</p> <ul style="list-style-type: none"> - 40 hours for lectures - 48 hours for structured tasks - 48 hours for self study
Credit Points	4.5 ECTS
Requirements according to the examination regulations	Students must attend lectures at least 80%
Recommended prerequisites	Complete all individual tasks scheduled in the LMS



MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY
UNIVERSITAS NEGERI JAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCE

Jl. Rawamangun Muka, RT 11/RW14, Rawamangun, Pulo Gadung
 East Jakarta City, Special Capital Region Of Jakarta 13220
 Email: pend.mat@unj.ac.id, <http://fkipa.unj.ac.id/penmat>

Program intended learning outcomes	<p>PLO 6: Mastering the principles of mathematical modeling, linear programming, differential equations, and numerical methods.</p> <p><i>Course Learning Outcomes</i>(CLO) to be achieved in this course are:</p> <p>CLOS 1: PD Level One Rank One CLOS 2: PD Level One High Rank CLOS 3: PD Linear Level n CLOS 4: Linear PD System CLOS 5: PD applications in other fields of science</p> <p>The relationship between PLO and CLO in this course is described as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">CLO</th> <th style="text-align: center;">PLO</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td style="text-align: center;">2</td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td style="text-align: center;">3</td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td style="text-align: center;">4</td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td style="text-align: center;">5</td> <td style="background-color: #cccccc;"></td> </tr> </tbody> </table>	CLO	PLO		6	1		2		3		4		5	
CLO	PLO														
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Content	<p>Students will learn about:</p> <ol style="list-style-type: none"> 14. PD level one to the power of one whose variables can be separated 15. Changing the PD level one to the power of one into PD whose variables can be separated 16. Exak PD 17. Changing PD level one to the power of one to exact 18. First-degree linear PD 19. Converting the first level PD to the power of one becomes a linear PD 20. PD Level One High Rank 21. n level linear PD with constant coefficients 22. PD level n linear with Variable coefficients (PD Cauchy and Legendre) 23. Level 2 linear PD with variable coefficient 24. Linear PD System <p>Differential Equations Application</p>														
Forms of Assessment	<p>Components and assessment weights in learning include assignments (30%), midterm exams (35%), and final exams (35%).</p>														



<p>Study and examination requirements and forms of examination</p>	<ul style="list-style-type: none"> • Study and examination requirements: <ol style="list-style-type: none"> 6. Students must be present 15 minutes before class starts. 7. Students who are absent, either with notification or not, more than 20% of the total meeting are considered failed. 8. Students are not allowed to use communication tools for purposes that are not related to learning. 9. Students must submit all assignments before the allotted deadline. 10. Students must take an exam to get a final grade. • Form of examination: Presentation and written exam
<p>media employed</p>	<ul style="list-style-type: none"> • Computer/laptop, internet, LCD, whiteboard, online platform (Microsoft Teams/Zoom, LMS), Microsoft Excel, Microsoft Power Point (for materials).
<p>reading list</p>	<ul style="list-style-type: none"> • Main Reference
	<ol style="list-style-type: none"> 1. Ayres, Frank. (1995). Differential Equations. Erlangga. 2. Williamson. (2001). Introduction To Differential Equations and Dynamical Systems. McGraw-Hill. 3. Kent Nagle (1994), Fundamental Of Differential Equations and Boundary Value Problems, Addison-Wesley Publishing Company Inc. 4. Kreyzig, (1983), Advanced Engineering Mathematics, 5th Edition, Wiley International, 1983 <ul style="list-style-type: none"> •