Module designation	*Engineering Mathematics*
Semester(s) in which the module is taught	*5*
Person responsible for the module	*1. Fitriana Yuli Saptanningtyas S.Pd, M.Si.* *2. Husna 'Arifah S.Si., M.Sc.*
Language	*Bahasa Indonesia*
Relation to curriculum	*Elective course*
Teaching methods	*150 minutes lectures and 180 minutes structured activities per week.*
Workload (incl. contact hours, self-study hours)	*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.*
Credit points	*3*
Required and recommended prerequisites for joining the module	*MAT6313 - Differential Equations*
Module objectives/intended learning outcomes	*CO1. Communicate ideas for solving mathematical problems related to differential equation systems, phase space, stability, power series of differential equations, Bessel functions, and Laplace transforms in writing and orally.* *CO2 Demonstrate a collaborative and independent attitude in carrying out individual and group tasks.* *Co3 Able to understand the concept of differential equations, phase plane concepts, stability, and use power series methods in finding solutions to differential equations.* *CO4 Able to use power series methods in finding Bessel function formulas.* *CO5 Able to use Laplace transform concepts to find solutions to differential equation problems.*
Content	*This course covers the application of differential equation systems, phase fields, stability, power series of differential equations, Bessel functions, and Laplace transforms Laplace*
Examination forms	*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.*

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<td>Study and examination requirements</td>
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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.

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>CO 1</td><td>a. Presentation
b. Discussion</td><td>Observation</td><td>5%
10%</td></tr>
<tr><td>2</td><td>CO 2, CO 3, CO 4</td><td>a. Individual assignment
b. Group assignment
c. Quiz
d. Midterm
e. Final test</td><td>Written</td><td>10%
10%
20%
20%
25%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
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<td>Reading list</td>
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1. A. Kreysig, E. 2006. Advanced Enginering Mathematics. Edisi 9. Singapore: John Weley dan Sons

2. B. Wilson. B. Howard,Dkk.,2002.Advanced Mathemathics and Mechanics Applications Using Matlab, New York:Chapman & Hall

3. C. Boyce, W.E. and Diprima, R.C. 1997. Elementary Differential Equations and Boundary Value Problems. Sixth Edition. New York: John Wiley & Sons, Inc.

4. D. Ross, S.L. 1984. Differential Equations. Third Edition. New York: John Wiley & Sons, Inc

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