MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNDERGRADUATE PROGRAM OF MATHEMATICS EDUCATION
Ketintang Campus, Jalan Ketintang, C8 C9 Building, Surabaya 60231
Phone: +62 895335466373, email: s1-pmat@unesa.ac.id
Website: https://pendidikan-matematika.fmipa.unesa.ac.id/

Module Name:	Ordinary Differential Equations Persamaan Diferensial Biasa
Module Level:	Sarjana (S-1) / Undergraduate
Abbreviation, if applicable:	8420203173
Sub-heading, if applicable:	-
Course included in the module, if applicable:	**-**
Semester/term:	4 / Second year
Module Coordinator(s):	Prof. Dr. Abadi., M.Sc.
Lecturer(s):	Dr. Dian Savitri, S.Si., M.Si. Rudianto Artiono, S.Pd., M.Si. Budi Priyo Prawoto, S.Pd., M.Si. Novita Vindri Harini, M.Pd. Annisa Rahmita Soemarsono, S.Si., M.Si.
Language:	Indonesia
Classification within the curriculum:	Compulsory course~~/elective studies~~
Teaching format/class hours per week during the semester	Teaching format: lectures, tutorial assignment, and individual Study/2 x 170 minutes = 340 minutes = 5.7 hours lectures
Workload:	16 weeks per semester consisting of: • 1 hour lectures (1 x 50 minutes) per week, • 1 hours assignments (1 x 60 minutes) per week, ➢ 1 hours individual study (1 x 60 minutes) per week, Total workload: 16x2x170 minutes = 5,440 minutes = 90.6 hours=3.18 ECTS*
Credit Point:	2
Requirements:	Integral Calculus Kalkulus Integral

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Learning Goals:	**PLO-5**: Possesses basic mathematical knowledge to solve mathematical problems and their applications in education. **PLO-6**: Masters the principles of mathematical knowledge to support mathematical thinking skills in solving mathematical problems.
Content:	Studying analytical solutions of first-order ODE, second-order linear ODE with constant coefficients, uncertain coefficients and parameter variations, series solutions of ODE, Laplace transform method and series through learning that involves students in collaborative group discussions to understand, construct, solve, simulate, and interpret differential equations and their applications, as well as providing IT-assisted assignments.
Study/exam achievements	• Students are considered competent and pass if the final score is at least 55 or C. • Final score is calculated as follows:

Week	Course Learning Outcomes (CLO)	Programme Learning Outcomes (PLO)	Evaluation (%)
1	CLO-1	PLO-6	2
2	CLO-1	PLO-6	2
3	CLO-1	PLO-5	2
4	CLO-1	PLO-5	2
5	CLO-2	PLO-5	2
6	CLO-2	PLO-5	2
7	CLO-2	PLO-6	2
8	CLO-4	PLO-5	20
9	CLO-2	PLO-5	6
10	CLO-2	PLO-6	5
11	CLO-2	PLO-6	5
12	CLO-2	PLO-5	5
13	CLO-2	PLO-5	5
14	CLO-4	PLO-6	6
15	CLO-3	PLO-5	6
16	CLO-3	PLO-6	28

• Final index is defined as follow:

	<table><tr><th>Index</th><th>Converted Score</th><th>Score Range</th></tr><tr><td>A</td><td>4.00</td><td>$85 \leq A \leq 100$</td></tr><tr><td>A-</td><td>3.75</td><td>$80 \leq A- < 85$</td></tr><tr><td>B+</td><td>3.50</td><td>$75 \leq B+ < 80$</td></tr><tr><td>B</td><td>3.00</td><td>$70 \leq B < 75$</td></tr><tr><td>B-</td><td>2.75</td><td>$65 \leq B- < 70$</td></tr><tr><td>C+</td><td>2.50</td><td>$60 \leq C+ < 65$</td></tr><tr><td>C</td><td>2.00</td><td>$55 \leq C < 60$</td></tr><tr><td>D</td><td>1.00</td><td>$40 \leq D < 55$</td></tr><tr><td>E</td><td>0.00</td><td>$0 \leq E < 40$</td></tr></table>
Forms of Media	Slides and LCD projectors, whiteboard
Literature	1. Boyce W.E. & DiPrima R.C. 2012. Elementary Ordinary Differential Equations and Boundary Value Problems 10th Edition, NewYork: John Willey and Sons. 2. Prawoto, Budi Priyo. 2019. Persamaan Diferensial Biasa. Surabaya: Unesa Press 3. Kreyszig, E. 2011. Advanced Engineering Mathematics 10th edition. New York: John Wiley and Sons. 4. Finan, Marcel B. 2010. A First Course in Elementary Differential Equations, Arkansas Tech University.
Note	Based on the regulation of the minister of education and culture of Indonesia number 3 of 2020 concerning national higher education standards, it is state 1 CU equals to 170 minutes per week. Therefore, in one semester (16 weeks, including midterm a final exam) 1 CU = 170 X 16 = 2.720 minutes or 45.3 hours. Therefore, workhours in 144 CU x 45.3 hours = 6.523,2 hours. Unesa decided that 1 ECTS with 144 CU, 6.523,2/229 ECTS = 28.48 hours, so that 1 CU = 1.59 ECTS