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/

Undergraduate Program of Mathematics   **Module Handbook**

Module Name:	Analytical Geometry
Module Level:	Sarjana (S-1) / Undergraduate
Abbreviation, if applicable:	8420202004
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	3 / Second year
Module Coordinator(s):	Dr. Susanah, M.Pd
Lecturer(s):	Dr. Susanah, M.Pd. Dr. Lestariningsih, S.Pd., M.Pd. Dr. Sri Suryanti, S.Pd., M.Si. Dr. Ali Shodikin, S.Pd., M.Pd. Evangelista Lus Windyana Palupi, S.Pd., M.Sc. Novita Vindri Harini, M.Pd. Dr. Mukhtamilatus Sa'diyah, M.Pd.
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 : 16 x 2 x 170 minutes = 5,440 minutes = 90.7 hours= 3.2 ECTS*
Credit Point:	2
Requirements:	N/A

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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 points in the plane and space; distance and midpoint formulas slope, equations of lines, angle between lines, distance from point to line, standard equations and properties of circles, ellipses, parabolas, hyperbolas, vector operations, dot and cross product, applications in geometry, equations of planes and lines in space; angle and distance between geometric objects, equation of a sphere; intersections and tangents in 3D, real-world modeling using analytic geometry, integration with technology tools, the real number system, real functions, limits and continuity, derivatives of a real function and their uses, transcendent functions and their derivatives, limits of improper forms, Taylor and Maclaurin series, applying these concepts to the problem of determining the asymptotes of function graphs, optimization problems and determining the approximation of a function at a point
Study/exam achievements	• Students are considered competent and pass if the final score calculated from the score of midterm exam, assignments, participation, and final exam 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-5	5
2	CLO-2	PLO-5	5
3	CLO-2	PLO-5	5
4	CLO-2	PLO-5	10
5	CLO-5	PLO-6	5
6	CLO-3	PLO-5	5
7	CLO-3	PLO-5	5
8	CLO-5	PLO-6	10

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9	CLO-3	PLO-5	5
10	CLO-3	PLO-5	10
11	CLO-4	PLO-5	5
12	CLO-4	PLO-5	5
13	CLO-4	PLO-5	5
14	CLO-4	PLO-5	5
15	CLO-4	PLO-5	5
16	CLO-4	PLO-5	10

- Final index is defined as follow:

Index	Converted Score	Score Range
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	$0 \leq E < 40$

Forms of Media	Slides and LCD projectors, whiteboard
Literature	1. Susanah.2024.GeometriAnalitika.Surabaya: Unesa University Press. 2. LeePengYee,FanLiangHuo. 2002. Mathematics2.Singapore: Shing Lee Publisher PTE.LTD. 3. http://www.mathportal.org/analytic-geometry/analytic-geometry-2d
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