



Module Handbook

Module Name :	<i>Geometri Analitik</i> Analytical Geometry
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420103042
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	4 th / first year
Module coordinator(s)	Dr. Agung Lukito, M.S
Lecturer(s):	Dr. Agung Lukito, M.S Rudianto Artiono, M.Si Muhammad Jakfar, 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 ~ 4.76 ECTS**
Credit Unit:	3 credit unit (4.76 ECTS)
Requirements:	Geometry



<p>Learning goals/competencies:</p>	<p>Knowledge (KNO-1) Demonstrating mathematical knowledge and mathematical insight.</p> <p>CLO-1: Demonstrate mathematical knowledge and mathematical insight in the algebra of vector, linear geometry, and quadratic geometry.</p> <p>Skill (SKI-2) Applying the basic principles of mathematics to solve simple* mathematical problems.</p> <p>CLO-2: Apply the basic principle of mathematics to solve simple mathematical problem related to the algebra of vector, linear geometry, and quadratic geometry.</p> <p>Skill (SKI-3) Analyzing the formal structure of mathematical problems and relevant fields.</p> <p>CLO-3: Analyze the formal structure of mathematical problems in the algebra of vector, linear geometry, and quadratic geometry.</p>
<p>Content</p>	<p>This course discusses Free Vectors, Linear Operation with Vectors, Coordinates of Vectors and Points, Product of Vectors, Affine and Euclidean Space, Curves and Surfaces, Equation of Straight Lines and Planes, Circles and Sphere, Conics and Quadrics. 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>											
<p>Study/exam achievements:</p>	<p>The final grade (NA) is calculated based on the following ratio:</p> <table border="1" data-bbox="539 1715 1347 2038"> <thead> <tr> <th>Assessment Components</th> <th>Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td>20%</td> </tr> <tr> <td>Assignment</td> <td>30%</td> </tr> <tr> <td>Mid-semester test</td> <td>20%</td> </tr> <tr> <td>Final semester test</td> <td>30%</td> </tr> </tbody> </table>		Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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	<p>Grade conversion of 0-100 scale into 0-4 scale is set as below:</p> <table border="1" data-bbox="549 349 1418 815"> <thead> <tr> <th>Letter</th> <th>Number</th> <th>Grade Interval</th> </tr> </thead> <tbody> <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> </tbody> </table>	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	$0 \leq E < 40$
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<p>Learning Methods :</p>	<p>Student-centered approach; project-based learning; lecturer and discussion; and presentations (structured activities)</p>																														
<p>Form of Media:</p>	<p>Power point slides; video; worksheets, and textbooks</p>																														
<p>Literature (primary references):</p>	<ol style="list-style-type: none"> 1. Chasey, J. 2019. A Treatise on the Analytical Geometry of the Point, Line, Circle and Conic Sections. Hansebook 2. Ian Visman, 1997, Analytical Geometry (Series on University Mathematics). World Scientific Publishing Company 3. Horatio Nelson Robinson, 2010, Conic Sections and Analytical Geometry: Theoretically and Practically Illustrated. Nabu Press 4. Chatterjee, 2009. Analytical Geometry: Two and Three Dimensions. Alpha Science International Limited 5. Thomas Grenfell Vyvyan, 2010, Analytical Geometry for Beginner: Part I. The Straight Line and Circle. Nabu Press. 6. Mittal dan Shanti Narayan, 2005, Analytical Solid Geometry. International Book Distributing Company 																														
<p>Notes:</p>	<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>																														



MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY

UNIVERSITAS NEGERI SURABAYA

FACULTY OF MATHEMATICS AND NATURAL SCIENCE

UNDERGRADUATE PROGRAM OF MATHEMATICS

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<p>**1 credit unit or $sks = 1.59$ ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019</p>
