



# UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
DEPARTMENT OF MATHEMATICS EDUCATION

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## Bachelor of Science in Mathematics

## MODULE HANDBOOK

Module name:	<i>n</i> -dimensional Geometry
Module level,if applicable:	Undergraduate
Code:	MAT6350
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	7 <sup>th</sup>
Module coordinator:	Kus Prihantoso Krisnawan, M.Si.
Lecturer(s):	1. Kus Prihantoso Krisnawan, M.Si. 2. Himmawati P.L.,M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Elective course
Teaching format / class hours perweek during the semester:	150 minutes lectures and 180 minutes structured activities per week.
Workload:	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.
Creditpoints:	3
Prerequisites course(s):	Analytic Geometry (MAT6312)
Course Outcomes:	After taking this course the students have ability to: CO 1. Respecting other people's views, opinions,and original ideas CO 2. Understanding definitions, theorems, and some characteristics in mathematics using critical and systematic thinking in a manner individually or groups

	<p>CO 3. Communicating, in writing or verbally, ideas to understand or solve mathematical problems.</p> <p>CO 4. Explaining the meaning or definition of terms and the intent of the theorems or properties in mathematics</p> <p>CO 5. Using related definitions and theorems to prove other properties or theorems.</p>																													
<p>Content:</p>	<p>This course discusses the parallel coordinate system of <math>n</math>-dimension. The topics are some foundations on projective geometry, points and lines visualization, planes, and hyperplanes. Firstly, it will be given the foundations in projective geometry, such as; projective plane model, axioms for projective geometry, and the fundamental transformation of projective geometry. Secondly, the subject of the points and lines visualization includes: representing points and lines in <math>\mathbb{R}^n</math>, parallel lines, intersecting lines, and crossing lines. The subjects in planes includes; representing plane in <math>\mathbb{R}^n</math>, parallel planes, intersecting planes, and <math>p</math>-flats. And, at the end of the course we discussed the hyperplanes.</p>																													
<p>Study/exam achievements:</p>	<p>CO1: Attitude assessment is carried out at each meeting using observation and / or self-assessment techniques by the assumption that every student is good. The student will be given a value as very good or not good if he/she shows, significantly, excellent or poor attitude. The results of attitude assessment used as one of the graduation requirements.</p> <p>The final grades will be weight as follow:</p> <table border="1" data-bbox="641 1528 1396 1843"> <thead> <tr> <th>No</th> <th>CO</th> <th>Objek Penilaian</th> <th>Teknik Penilaian</th> <th>Bobot</th> </tr> </thead> <tbody> <tr> <td rowspan="3">1</td> <td rowspan="3">CO 2 and 4</td> <td>a. Presentation</td> <td rowspan="2">Observation Written</td> <td>10%</td> </tr> <tr> <td>b. Individual Assignment</td> <td>10%</td> </tr> <tr> <td>c. Quiz</td> <td>Written</td> <td>20%</td> </tr> <tr> <td rowspan="3">2</td> <td rowspan="3">CO 3 and 5</td> <td>a. Group Assignment</td> <td rowspan="3">Written</td> <td>10%</td> </tr> <tr> <td>b. Mid exam</td> <td>20%</td> </tr> <tr> <td>c. Final exam</td> <td>30%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Objek Penilaian	Teknik Penilaian	Bobot	1	CO 2 and 4	a. Presentation	Observation Written	10%	b. Individual Assignment	10%	c. Quiz	Written	20%	2	CO 3 and 5	a. Group Assignment	Written	10%	b. Mid exam	20%	c. Final exam	30%	Total				100%
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<p>Forms of media:</p>	<p>Board, LCD Projector, Laptop/Computer</p>																													

Literature:	<ol style="list-style-type: none"> <li>1. Alfred Inselberg. 2009. <i>Parallel Coordinates, Visual Multidimensional Geometry and Its Applications</i>. New York: Springer ScienceBusiness Media, Inc.</li> <li>2. Sommerville, D.M.Y. -. <i>An Introduction to the Geometry of n-Dimensions</i>. London: Methuen &amp; Co. Ltd.</li> </ol>
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**PLO and CO mapping**

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1		✓								
CO2			✓							
CO3				✓						
CO4					✓					
CO5						✓				