MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCE
UNDERGRADUATE PROGRAM OF MATHEMATICS
Ketintang Campus, C8-C9 Buildings of FMIPA, Surabaya
Email: s1-mat@unesa.ac.id

Module Handbook

Module Name :	*Geometri* Geometry
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420103041
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	3rd/ Second year
Module coordinator(s)	Prof. Dr. Dwi Juniati, M.Si.
Lecturer(s):	Prof. Dr. Dwi Juniati, M.Si. 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 (*sks* 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 ~ 4.77 ECTS**
Credit Unit:	3 credit unit (4.77 ECTS)
Requirements:	None

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Learning goals/competencies:	**Knowledge (KNO-1): Demonstrating mathematical knowledge and mathematical insight.** ● CLO-1: Demonstrate knowledge of the Plane geometry with a focus on Euclidean geometry and transformation geometry (various important theorems in Euclidean geometry and the positions of points, lines and planes (through the vector approach), they also discuss the concept of isometry, isometric groups, isometric classification and their properties) using axiomatic and analytic approaches **Skill (SKI-2): Applying the basic principles of mathematics to solve simple mathematical problems.** ● CLO-2: Apply knowledge of the concept of planes and theorems associated with solving geometric problems **Skill (SKI-3): Analyzing the formal structure of mathematical problems and relevant fields.** ● CLO-3: Analyzing the formal structure of geometry problems (in their application in wallpaper, tessellation and related problem solving) and relevant fields **Competences (COM-1): Proving mathematical statements by various methods.** ● CLO-4: Proving geometry statements by various methods in axiomatic and analytic approaches. **Competences (COM-3): Solving mathematical problems using technology** ● CLO-5: Solving geometric problems using technology (ex: geogebra, transformation geometri, IFS, etc)
Content	This course discusses about plane geometry with a focus on Euclidean geometry and transformation geometry using axiomatic and analytic approaches. In addition, we discuss the proofs of various important theorems in Euclidean geometry and the positions of points, lines and planes (through the vector approach) and also discuss the concept of isometry, isometric groups, isometric classification and their properties, and their application in wallpaper, tessellation and related problem solving. Lecture activities are carried out in a student center with

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	discussions, observations, project assignments, and presentations.

Attribute Soft skill:	Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class
Study/exam achievements:	The final grade (*NA*) is calculated based on the following ratio:

Assessment Components	Percentage of contribution
Participation	20%
Assignment	30%
Mid-semester test	20%
Final semester test	30%

Grade conversion of 0-100 scale into 0-4 scale is set as below:

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	$0 \leq E < 40$

Learning Methods :	Student-centered approach; project-based learning; lecturer and discussion; and presentations (structured activities)
Form of Media:	Power point slides; video; worksheets, and textbooks

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Literature (primary references):	1. Walter J. Meyer. (2021). Geometry and Its Applications 3rd Edition. San Diego: Academic Press, Elsevier. 2. Patrick J. Ryan. (2008). Euclidean and Non-Euclidean Geometry: An Analytic Approach. New York: Cambridge University Press. 3. Michele Audin. (2007). Geometry. Berlin: Springer-Verlag 4. Marvin J. Greenberg. (2007). Euclidean and non-Euclidean Geometry: Development and History. New York: W. H. Freeman. 5. Glaeser, G. (2020). Geometry and its Applications in Arts, Nature and Technology. Springer.
Notes:	*1 credit unit or *sks* 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.
	**1 credit unit or *sks* = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019